

Southern Illinois University Carbondale

2018-2019 Undergraduate Catalog

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Admissions

Admission of Transfer Students

If you have attended another college, university, or postsecondary institution you are required to submit an official transcript from each institution attended. All transcripts become the official property of Southern Illinois University Carbondale and will not be returned nor issued to another institution. Transcripts must be issued by the previously attended institution within the last thirty days. Transcripts are required from the following institutions:

1. An institution which is accredited or in candidacy status by one of the regional accrediting associations; or,
2. An institution which is not accredited by or in candidacy status with one of the regional accrediting associations but the credit from the institution is accepted by the reporting institution in that state; or,
3. An institution which is not accredited by or in candidacy status with one of the regional accrediting associations but is one recognized by ACCSCT, ACICS, N.A.I.T., AMA, ABET, or similar accrediting bodies recognized by the Council of Higher Education Accreditation or the United States Office of

Education. The student must have completed a two-year non-baccalaureate degree or equivalent terminal program with a C average before admission to SIU will be granted. Students admitted from such institutions should not expect to receive credit at Southern Illinois University Carbondale except in programs which accept occupational credit. No credit toward University Core Curriculum will be awarded from non-regionally accredited institutions.

Requirements for Admission of Transfer Students

1. Graduation from a recognized high school or satisfactory completion of the General Educational Development Test (GED), High School Equivalency Test (HiSET), or Test Assessing Secondary Completion; and,
2. An overall C average (2.0 on a 4.0 scale) from all post-secondary institutions. If necessary, grade point average will be converted to a 4.0 scale and/or semester hours. Remedial (non-credit) course work is not used in calculating the admission grade point average. All transfer work is calculated according to Southern Illinois University Carbondale regulations rather than those of institutions students have previously attended; or,
3. Completion of an associate degree in a baccalaureate-oriented program of Arts or Science (A.A. or A.S.) from an accredited Illinois public two-year institution; completion of an A.A. from an accredited Missouri public two-year institution participating in the 42 hour block; or completion of an A.A. or A.S. from a Kentucky Community and Technical College System institution. The student will: (a) be admitted to the University with junior standing if enrollment occurs after earning the associate degree and prior to coursework being attempted at another institution and (b) be considered to have completed the University Core Curriculum requirements for general graduation purposes; and,
4. Eligible to continue enrollment at the last post-secondary institution attended. Students who have been placed on scholastic probation or suspension from another college or university will be considered for admission by Undergraduate Admissions only if there is tangible evidence that additional education can be completed successfully. Tangible evidence might include: (1) an interruption of schooling for one or more years, (2) military experience, (3) work experience, and (4) previous academic performance.

The [Office of Student Rights and Responsibilities](#) must clear students suspended for any reason other than academic failure, before the Director of Admissions will grant admission. Transfer students with fewer than twenty-six transferable semester hours and at least 2.0/4.0 transfer GPA must submit the necessary credentials for freshman admission and will be reviewed holistically to determine potential admission.

Transfer students who have completed a minimum of one year of college level work can be considered for admission in advance of their matriculation. Students who are enrolled in a collegiate program for the first time and wish to transfer upon completion of the first term or first year, may do so if the student meets the University's admission requirements for beginning freshmen. Admission granted to a student on partial or incomplete records is granted with the condition that the student will have an overall C average and be eligible to continue at the last school attended at the time of matriculation. Students whose final transcripts indicate a grade point average or scholastic standing less than that required for unconditional admission may have their admission and registration withdrawn or their scholastic standing changed. Transfer students admitted on the basis of incomplete transcripts must submit complete transcripts prior to being allowed to register for a second term at SIU.

Transfer students will be admitted directly to the academic unit in which their major field of study is offered if they qualify for that program. Students who are undecided about their major field of study will be admitted and advised by Exploratory Student Advisement or the selected unit with an undecided major.

Dual Admission Program

The Dual Admission Program allows baccalaureate-oriented students at eligible community colleges to benefit from pre-advisement for a chosen major at Southern Illinois University Carbondale. The Dual Admission Program addresses specific departmental requirements that a student may not automatically fulfill by completing their associate degree at their community college. Students who apply for the Dual Admission Program are provided with a transfer plan that will guide them to the most direct route to their bachelor's degree, along with personalized contact with an SIU representative. The transfer plan includes major, College, and University Core Curriculum requirements. Dual Admission Program students receive access to enroll in an online Dual Admission Program course which connects students early to

the University, its resources, and other transfer students. Students apply to the Dual Admission Program by completing the Application for Undergraduate Admission and indicating interest in the Dual Admission Program. Students must have at least two semesters remaining at their community college to participate, must select a participating SIU major, and must attend an eligible community college. Information on participating degree programs and community colleges are located online at admissions.siu.edu/dap.

Transfer Credit

Transfer credit for students admitted to the University is evaluated for acceptance toward University Core Curriculum requirements by Articulation and Evaluation (a division of the Registrar's Office). Credit from a regionally accredited institution, and those in candidacy status, or from an institution that has its credit accepted by the reporting institution in the state is evaluated at the time of admission. Courses, which are remedial, developmental or pre-college, will not be accepted for transfer. Articulation and Evaluation will determine the acceptance of credit and its applicability toward University Core Curriculum requirements. All credit accepted for transfer, which is not applied to University Core Curriculum requirements or to a specific degree program, will be considered general transfer credit (elective credit). Transfer courses to be considered toward specific program requirements will be authorized by the department directing the program. Information on articulation of individual schools is available at: articulation.siu.edu.

Credit for Military Experience. Students who have served one or more years of active duty and received an honorable or general discharge may receive two hours of military studies credit, two hours of physical education credit, and two hours of health education credit which satisfies the UCC Human Health requirement. Service of only six months to one year may result in two hours of freshman aerospace studies or army military science credit. Completion of basic training will result in an award of two hours of physical education credit. To receive credit, students must submit a copy of the DD 214 (copy 4) document to Articulation and Evaluation.

Credit will be accepted for DANTES subject standardized courses within the limits enforced for proficiency credit. No credit is allowed for college-level GED tests. In evaluating credit possibilities based on formal service-school training programs, the recommendations of the American Council on Education, as set forth in the US Government bulletin *Guide to the Evaluation of Educational Experiences* in the Armed Forces are followed. To receive credit for military service, veterans must present a copy of DD214, a Joint Services (JST) Transcript, an AARTS transcript, a SMART transcript or transcript from the Community College of the Air Force to Southern Illinois University Carbondale, Articulation and Evaluation, Student Services Building, Mail Code 4725, 1263 Lincoln Drive, Room 0382, Carbondale, IL 62901. For information go to: articulation.siu.edu.

Submission of Transcripts. Transfer students who have taken college-level work at other institutions must have an official transcript of all work, from each college or university attended, forwarded to Articulation and Evaluation. All transcripts must be issued by the sending institution within the last thirty days. Failure to comply with this ruling, failure to indicate all institutions attended on the Application for Undergraduate Admission, or incorrect information regarding the status at other institutions can result in withdrawal of admission, dismissal, or denial of credit. Transfer students admitted on the basis of incomplete transcripts must submit complete transcripts prior to being allowed to register for a second term at SIU. A registration hold is used to manage policy compliance.

Completion of an associate in arts or associate in arts or associate in science degree in a baccalaureate-oriented program (A.A. or A.S.) in an accredited Illinois two-year public institution; completion of an A.A. from an accredited Missouri public two-year institution participating in the 42 hour block; or completion of an A.A. or A.S. from a Kentucky Community and Technical College System institution provides that the student will: (a) be accepted with junior standing if enrollment occurs after earning the associate degree prior to coursework being attempted at another institution and (b) be considered to have completed the University Core Curriculum requirements for general graduation purposes. These benefits do not automatically apply to other associate degrees (e.g., A.A.S., A.E.S., A.G.S., A.F.A.). Associate degrees earned at out-of-state two-year institutions will be reviewed by Articulation and Evaluation. If the degree is determined to be baccalaureate-oriented and to have comparable content and credit hour criteria, the same benefits will be extended to those graduates. Transfer students may also satisfy the requirements of the University Core Curriculum by successful completion of the Illinois Transferable General Education Core Curriculum (GECC). Credit from an accredited two-year institution is limited only by the provision that students must earn at least 42 semester hours of senior level (300-400) work at Southern Illinois University Carbondale or at any other approved four-year institution and must complete the residency requirements for a degree from the University.

Further information on the application of transfer work toward satisfying University Core Curriculum requirements may be found in the University Core Curriculum section.

Admission of Special Categories

Several types of students are given special consideration when seeking admission to the University.

Provisional Admission at Off-campus Military Sites

Active Duty servicemembers may be provisionally admitted to the University for one semester with incomplete academic credentials. A copy of the military ID is needed to verify status for provisional admission and for tuition assessment purposes. Certain academic records may be necessary to receive financial aid. For students to be released from provisional status, they must submit official transcripts from all institutions previously attended, including official high school transcripts (or GED, HiSET, or TASC scores) if the student has earned less than 26 transferable semester hours. In addition, ACT or SAT scores are required if the applicant is under 21 years of age and has earned less than 26 transferable semester hours. Working closely with their academic advisors, students must submit all required academic records and meet all University admission requirements in order to register for further coursework beyond the first semester of attendance.

Admission of International Students

International students must meet the same academic standards for admission as those required of domestic students. As there is considerable variation between educational systems throughout the world, precise comparative standards are not always available. Therefore, International students are considered for admission on the basis of their former academic work, English proficiency, and evidence of adequate financial resources.

Educational Records. Students must submit official transcripts, certificates, or mark sheets from all secondary schools, colleges and universities attended. Also, students must submit the official results of any national secondary school examinations that are required. If you completed high school in the U.S.A. or in an American high school system, submit scores from the American College Test (ACT) or the Scholastic Aptitude Test (SAT). Other applicants may submit SAT scores for admission consideration, but they are not required to do so.

The access codes for the West African School Certificate should be submitted with the application. This will allow us to process the application quickly.

The submission of unofficial records (those that do not bear the original signature of the institution's representative), will delay the processing of your admission. The Registrar, Headmaster, or Dean of the institution issuing the documents must sign all credentials. Photocopies are acceptable only if they bear the institution's original seal and the original signature of the school official certifying the documents. Transcripts and other records attested as certified by a notary public or solicitor (non-institutional official) are not being accepted as official.

Financial Requirements. Beginning Fall 2013 semester, international students must have assured financial resources of approximately \$40,000 (U.S. dollars) for the academic year of study at SIU. *The cost of attendance at SIU Carbondale is subject to change without notice.* Please refer to the International Admissions Application for details.

English Competency. Students must also demonstrate English competency before enrolling in SIU Carbondale university courses. TOEFL scores are required of all International Students and those who have acquired immigrant status. Any of the following options will qualify you for exemption from our Center for English as a Second Language TOEFL examination:

TOEFL	IELTS	ITEP Academic Plus	U.S. Schooling
520-Paper based	6	4	2 yrs. high school
68-Internet based			48 U.S. college hours

2 Face-to-face English composition classes taken in the U.S. at the college level with a grade of A or B
An administrative service fee of \$100 per student per semester, including summer session, will be charged to sponsoring agencies which enroll international students.

International students interested in making application to Southern Illinois University Carbondale should address their inquiries to Center for International Education, Mail Code 4333, Southern Illinois University Carbondale, Carbondale, Illinois 62901. The undergraduate international admission application can be submitted electronically by linking tocie.siu.edu.

Southern Illinois University Carbondale is authorized under Federal law to enroll non-immigrant alien students.

Admission of Former Students

Students who have attended other institutions since their previous enrollment at Southern Illinois University Carbondale must submit an official transcript from each institution before being considered for readmission. An overall C average (2.0 on 4.0 scale) as calculated according to SIU grading policies and procedures and based on all post-secondary institutions attended since previous SIU enrollment is required for readmission consideration. Students who were suspended for scholastic or disciplinary reasons during their previous enrollment at the University must be approved for readmission by the appropriate academic dean or the Office of Student Rights and Responsibilities before they can be readmitted to the University. Students with less than a C average must be approved for readmission by an academic dean if they are entering an academic unit other than the one in which they were previously enrolled.

It is advisable for former students to initiate the readmission process with the Office of Undergraduate Admissions early. This permits students to complete any special requirements that may be imposed upon them. (See Scholastic Probation, Academic Renewal Program for Former Students and Scholastic Suspension elsewhere in this catalog for further information.)

Academic Renewal Program for Former Students

The Academic Renewal Program is designed to allow some former Southern Illinois University Carbondale students, who had academic difficulty in their initial enrollment, an opportunity to get off probation faster and to graduate in a timely manner. The program permits eligible students to establish a new grade point average calculated from their first semester of readmission.

Program Eligibility Requirements. Former Southern Illinois University Carbondale students who meet one of the following qualifications may apply for entrance to the Academic Renewal Program.

1. Adult re-entering students who previously earned at Southern Illinois University Carbondale less than a 2.0 grade point average and have since had at least three calendar years interruption following their last enrolled term at SIU Carbondale. Applicants who have attended any post-secondary institution, college, or university within the immediate three years prior to re-entering Southern Illinois University Carbondale in the Academic Renewal Program, must have earned a 2.0 cumulative grade point average.
2. Veterans who have completed at least one year of active military service after having previously earned at Southern Illinois University Carbondale less than a 2.0 grade point average. Southern Illinois University Carbondale must be the first institution attended since discharge or separation.
3. Community college associate degree graduates who have previously earned from SIU Carbondale a grade point average below 2.0 prior to completing an associate degree from a regionally accredited institution. SIU must be the first institution attended since earning the associate degree.

Application/Admission Guidelines and Academic Regulations

1. A former Southern Illinois University Carbondale student must meet the University readmission requirements at the time of readmission before applying for the Academic Renewal Program.
2. The Academic Renewal Program application must be submitted before completing the first semester of attendance after being readmitted to the University. The application should be submitted soon after the readmission decision is granted.
3. A student can be admitted to Academic Renewal only once. Students who are suspended for scholastic reasons while enrolled in Academic Renewal cannot be readmitted to this program.
4. Teacher Education Programs in the College of Education and Human Services as well as those majors in other colleges in which a student intends to pursue a Teacher Education Program are not available to students in the Academic Renewal Program.
5. Students readmitted through the Academic Renewal Program will have Academic Renewal indicated on their transcripts with an appropriate explanation of the program included in the transcript explanation sheet, which is attached to all transcripts.
6. A new Southern Illinois University Carbondale grade point average will be calculated from the first term of readmission through the Academic Renewal Program.

7. The new Southern Illinois University Carbondale grade point average will apply only to scholastic retention, and the grade point average required for graduation from the University. All grades earned at Southern Illinois University Carbondale, including all work taken prior to admittance to the Academic Renewal Program, will be used in the calculation of student classification, major program grade point average, collegiate unit requirements, graduation honors, and total semester hours completed.
8. Previously earned work at Southern Illinois University Carbondale will remain on the student's official record and passing work may be used to satisfy degree requirements.
9. Students readmitted through the Academic Renewal Program may not use the University's forgiveness policy to calculate another grade point average for graduation purposes.
10. To be eligible for graduation, a student readmitted through the Academic Renewal Program must earn at least 30 additional semester hours at Southern Illinois University Carbondale.
11. An Academic Renewal student who changes majors to a program that does not participate in Academic Renewal, (see number 4) will have their previous SIU grade point average calculated in all future grade point averages.

Admission of Veterans

Veterans and Active Duty servicemembers seeking admission to the University are admitted in good standing regardless of their previous academic record provided that any additional post-secondary education attempted after active duty has been completed with a grade point average of C (2.0 on a 4.0 scale) quality or better.

Veterans and Active Duty servicemembers are required to submit all required admission credentials before their applications can be processed. This includes high school transcripts, GED scores, HiSET scores, or Test Assessing Secondary Completion scores, ACT or SAT results if under the age of 21, and official transcripts from each college or university previously attended. Official transcripts from the previously attended institutions must not be more than thirty days old. In order to be admitted under the veteran's policy, one must have served on active duty and present a copy of discharge or separation papers (DD 214-copy 4) or a copy of the military ID to the Undergraduate Admissions office. There is a \$40 non-refundable fee, which must accompany the Application for Undergraduate Admission.

Military personnel on active duty in any branch of the United States military are expected to meet the same admission requirements as a veteran. Students in military programs are admitted directly into the degree program in which they are enrolling.

Admission of Students as Unclassified

Individuals who wish to take classes at SIU Carbondale but who do not intend to earn a degree at this time can be considered for admission as an unclassified student. To be eligible, the student must have graduated from an accredited high school or have passed a high school equivalency test (GED, HiSET, or Test Assessing Secondary Completion). Students in this category are non-degree-seeking and are not required to submit records normally required for the admission to a degree program. Students in this category may take up to a total of twenty-six semester hours before they are required to provide all of their academic records. Students in this category are not ordinarily eligible for any financial aid program. There is a \$40 non-refundable fee that must accompany this application. This fee is not required of students enrolling solely in courses specifically designated as Distance Education.

Senior Citizen Courses Act

Students admitted under the Senior Citizen Courses Act may be considered for admission as unclassified non-degree students without submitting records required for admission to a degree program. Those seeking admission to a degree program must meet all University admission policies. For further information refer to Financial Aid.

Admission of High School Students for Concurrent Enrollment

Exceptionally capable high school students that have completed their freshman year in high school and are recommended in writing by their high school principal may be approved for admission by the Director of Undergraduate Admissions. Enrollment in some University courses may be subject to departmental approval. Students approved for admission to this program will be permitted to enroll in University courses during the summer and concurrently with their high school work during the regular

school year. Sophomores and juniors may register for one course and seniors may enroll for one and possibly two courses depending on their high school schedules. There is a \$40 non-refundable fee, which must accompany the application. The concurrent enrollment program is an acceleration and enrichment experience for academically capable students. To participate in the program, students must have achieved an overall *B* grade point average (3.0 on a 4.0 scale) in high school, submit a completed Request for Concurrent Enrollment of High School Students form, and submit high school transcripts. <http://admissions.siu.edu/apply/high-school/high-school-concurrent.php>

The University courses to be taken in this program should be in subject areas in which a high school does not offer courses or in subject areas in which the student has completed all of the courses the high school can offer. When a high school principal recommends a specific course or courses to be taken, an academic advisor will assist the student in arranging such a schedule.

It is assumed that high school principals or guidance counselors who recommend students for this program will consider a student's aptitude for completing college work and a student's ability to adjust socially to the campus community.

Admission of Transient Students

Students who are attending another collegiate institution and want to enroll for one semester must submit an undergraduate admission application. They must also submit documentation indicating they have an overall *C* average and are eligible to continue their enrollment at the last institution attended. This can be a student's most recent transcript or grade report. Transient students who request to continue their enrollment for subsequent semesters must submit all documents required for admission and meet the University's current admission policies. There is a \$40 non-refundable fee, which must accompany the application.

Admission of Freshmen

To be eligible for admission, you must be a graduate of a recognized high school. Graduates of non-recognized high schools may be admitted to the University by submitting an acceptable entrance examination score. If you have not completed high school, you may be considered for admission by passing the GED test, HiSET test, or the Test Assessing Secondary Completion.

Freshmen students will be admitted directly to the academic unit in which their major field of study is offered if they qualify for that program. Students who are undecided about their major field of study will be admitted and advised by Exploratory Student Advisement or the selected unit with an undecided major.

Students admitted as beginning freshmen, but who enroll at another college or university prior to their enrollment at Southern Illinois University Carbondale may face a change in their admission status. It will be necessary for students to report work in progress and forward the official transcripts after completion of the coursework.

Beginning freshmen are considered for admission on the basis of a combination of high school performance and test scores (ACT or SAT). In addition, students entering the University are required to have completed selected high school courses to qualify for unconditional admission. All students granted admission while in high school are required to graduate from high school and to meet the Course Subject Pattern Requirements listed below.

Course Subject Pattern Requirements. This policy applies to beginning freshmen and transfer students who have completed fewer than twenty-six semester hours of transferable credit.

High school units in excess of the required number of units in social studies or science may be redistributed among the other categories by applying no more than one unit to any of the following categories: social studies, science, or elective. Elective subjects cannot be substituted for required courses in English, mathematics, science or social sciences. A prospective student with two or more deficiencies in English or mathematics may be subject to denial.

Beginning freshmen may satisfy a course pattern deficiency by achieving a sub score on the ACT or SAT, which is equivalent to the sixtieth percentile on the College Bound Norms. CLEP scores or AP scores that qualify the student for credit may also fulfill deficiencies. The tests must be in the area that is deficient.

Students who have course pattern deficiencies but qualify for admission based on high school grade point average, test scores and transfer grade point average, will be admitted to the University on the condition that deficiencies will be satisfied through the academic advisement process.

Selected applicants are exempt from the course subject pattern requirements. These include students whose high school grade point average and ACT/SAT test scores are at the seventy-fifth percentile, participants in the high school/concurrent enrollment program until the time of their high school graduation, and transfer students who have earned at least 26 semester hours of transferable credit.

Requirements for Admission of Freshmen

High school graduation and fulfillment of mandated course subject pattern requirements are required for admission.

Additionally, applicants meeting either of the following two criteria will be automatically admitted to the University. Exceptions to this rule are those programs that have established additional admission requirements beyond the University's minimum standards for admission, and recommendations of the Campus Violence Prevention Committee that deny or place conditions on admission.

ACT composite score at or above 23 or New SAT total at or above 1130 and a high school grade point average at or above a 2.0 (on a 4.0 scale)

or

ACT composite score at or above 18 or New SAT total at or above 940 and a high school grade point average at or above a 3.0 (on a 4.0 scale).

All other applicants who meet the course subject pattern requirements will undergo a holistic review to determine potential admissibility. Admission of students who do not meet automatic admission requirements may be subject to conditions.

The preferred deadline for completed applications is December 1st, for entry in the following fall semester. The secondary deadline is May 1st. A completed application consists of an Application for Undergraduate Admission and Scholarships and receipt of all necessary credentials, including test scores and transcripts. All completed applications received by the preferred deadline will be guaranteed a decision by February 1.

Academic Advisement

Academic advisement for the undecided freshman student is administered in Exploratory Student Advisement. Transfer students and continuing students advise with their academic unit. Each unit employs a select group of professional advisors assigned to students typically by major at the point of admission. They operate under the supervision of a chief advisor who is responsible to the dean of the academic unit.

The University accepts the importance of the academic advisement function. Insistence on receipt of transcripts and ACT or SAT scores prior to admission serves not only to determine admission, but later provides suitable educational information to advisors upon which decisions can be made relative to the proper courses to advise the student to take. On the basis of this information, an advisor can make intelligent decisions relative to students who should receive advanced standing in courses or who should be urged to take proficiency examinations in courses about which they appear to be already well informed.

The advising of individual students as to their progress is a service provided to them. It does not relieve the students of the responsibility to assure that they are meeting the requirements they need for graduation. DegreeWorks audit tool is available for students and accessed through the SalukiNet portal. This electronic audit tool verifies progress to degree for students with a catalog year of summer 2012 and later. The students should check with their advisor whenever there is a question as to how they are proceeding.

Registration for Courses

Registration for any session of the University is contingent upon being eligible for registration. Thus advance registration, including the payment of tuition and fees, is considered to be invalid if the student is later declared to be ineligible to register due to scholastic reasons. One may also be considered ineligible to register because of financial or disciplinary reasons.

Detailed information about the dates and procedures for advisement and registration may be found at: registrar.siu.edu/schedclass.

Familiarization with the following general points about registration is important:

1. Registration for a semester is conducted under a registration calendar consisting of three distinct periods. Advance registration occurs during the latter half of the preceding term, final registration immediately preceding the start of classes and late registration during the first week of classes. Late registration is subject to a late fee.
2. Currently enrolled students are expected to register during the advance registration period. New freshmen, transfer, and re-entry students are provided an opportunity to advance register on specific new student registration days during the advance registration periods.
3. Students who are unable to advance register may register prior to the beginning of classes during the final registration period.
4. Students register online within [SalukiNet \(salukinet.siu.edu\)](http://salukinet.siu.edu) after visiting with the advisement center of their colleges, schools, or departments.
5. A student may not attend a class for which he/she is not officially registered. Mere attendance does not constitute registration in a class, nor will attendance in a class for which a student is not registered be a basis for asking that a program change be approved permitting registration in that class. Students should complete the registration process before classes begin.
6. Enrollment changes to classes are normally made within SalukiNet. After particular deadlines have passed which would prevent the student from doing this, such changes can only be made through the use of an official registration form approved by the advisement center and processed by the Registrar's Office.
7. Tuition and fees are payable as billed, and no student shall be allowed to register for classes in any educational unit if they have a past-due balance greater than \$200.
8. Students may not drop a course merely by stopping attendance, but must officially drop the course. Any credit/refund of tuition or fees is determined by the date the course was dropped. Student initiated course drop using SalukiNet will carry the effective date of that action for the purpose of determining tuition and fee refund.
9. Transfer students admitted on the basis of incomplete transcripts must submit complete transcripts prior to being allowed to register for a second term at SIU. SIU, Evaluations, Registrar's Office, Student Services Building MC 4725, 1263 Lincoln Drive, Room 0382, Carbondale IL 62901.

Attendance

The faculty of Southern Illinois University Carbondale affirms the importance of prompt and regular attendance on the part of all undergraduate students. Quality instruction clearly depends upon active student participation in the classroom or its equivalent learning environment. In the transition from high school to the university and from the university to the workplace, personal success is directly related to good attendance.

As a caring public institution, SIU has the obligation to encourage its primary constituents, the students, to meet their responsibilities first of all to themselves, but also to their families, their classmates, their instructors and the taxpayers and donors who underwrite higher education in the state of Illinois.

For these reasons the SIU faculty remind undergraduates and their instructor that the first day of class is just as valuable as the last day of class; that work and other extracurricular commitments do not necessarily justify an absence; that holidays begin and end precisely as stated in the University calendar; that instructors should be notified three days prior to religious observances; that major examinations, term papers, and/or assigned projects for one class do not exempt students from their need to attend another; and finally, that some financial assistance at the University is actually contingent upon attendance. Students who need to miss class due to religious observances should refer to the *Policy Accommodating Religious Observances of Students* at the end of the University Policies section of this catalog.

Students who stop attending a class without officially dropping will be subject to being awarded a *WF* grade for the class. The *WF* grade is assigned by the instructor along with an indication of the recorded last date of attendance. The *WF* grade counts as an *F* in the undergraduate GPA calculation. The last date of attendance associated with the *WF* may affect the student's enrollment status, and thus their eligibility for financial aid.

These guidelines express the faculty's collective concern for undergraduates and for one important feature of their education here at SIU.

Withdrawal

Students who officially register for a session must officially withdraw from that registration in a timely manner to avoid being charged as well as receiving a failing grade for those classes. An official withdrawal must be initiated by the student, or on behalf of the student through the academic unit, and be processed by the Registrar's office. Outlined below are the procedures to be followed when withdrawing courses and when dropping from the University (which would be withdrawal from all courses for which registered) with the intention of leaving the University.

Deadline Dates

If Classes Meet for	Deadline for Withdrawal to Receive Full Refund	Deadline to Withdraw
13–16 weeks	2nd week	10th week
9–12 weeks	2nd week	8th week
8 weeks	2nd week	5th week
7 weeks	1st week	4th week
4–6 weeks	1st week	3rd week
2–3 weeks	1st day	1st week
Less than 2 weeks	1st day	2nd day

Course Drops. Effective Fall 2009 all students that wish to officially add or drop classes will do so within the SalukiNet portal. Unless a student has processed an authorized drop from a course by the deadline in the schedule above, the student will not be allowed to drop the course. It is the student's responsibility to ensure that the drop process is officially completed. It is probable that a student, who does not drop by the deadlines, but stops attending during the second half of the semester, will receive a grade of *WF*. Note: ceasing to attend a course may affect a student's financial aid eligibility and the *WF* counts as an *F* in the calculation of the GPA. Students who drop courses after the full refund deadline, but remain enrolled in the University, will not receive any refund.

Withdrawal From the University. Students registered for academic work must obtain a withdrawal if they contemplate leaving the University. If a housing contract has been purchased, the student must contact University Housing to cancel the contract.

Withdrawal from the University is a serious decision, which, in many cases, affects financial assistance status, housing contracts, and academic records. A student may, with authorization from the Registrar's Office, obtain a withdrawal. There are, however, restrictions on a withdrawal. A withdrawal will not be issued beyond the tenth week of the semester unless the reasons for the withdrawal are beyond the student's control and verified in writing. Warning: if a student obtains a withdrawal after the 100% refund period and is receiving financial assistance, the student may be in violation of the Satisfactory Progress for Financial Assistance policy since no academic credit will be earned for the semester. The table above provides the deadline dates for withdrawal. All credentials or refunds are determined by the effective date of the withdrawal and is subject to the direction of the USDOE for the distribution of Title IV funds if applicable.

Students receiving a withdrawal from a full semester length course within the first two weeks will, under normal circumstances, receive a refund of all tuition and fees paid by the student or family. Some or all financial assistance funds, depending on the source, will be returned to their original sources if the student withdraws during the 100% period.

Students who withdraw after the full refund deadline will receive an account credit equal to the appropriate refund of tuition and fees. An administrative fee will be assessed to all students who withdraw from the University and receive a refund beyond the full refund period. The amount of the fee will be a fixed charge of \$100. See the following:

Refund Schedule for withdrawals from the University (Effective Fall 2011)

SIU Refund Policy

This chart is based on refunding for full semester length courses.

Percentage of Refund	Tuition	Fees
Week One	100%	100%
Week Two	100%	100%
Week Three	50%	100%

Percentage of Refund	Tuition	Fees
Week Four	50%	0%
Week Five and after	0%	0%

No tuition refund will be given after week four; no refund of fees will be given after week three. Student medical benefit fee cannot be refunded after week two and payment has been made to carrier. Student fees are charged as a condition of enrollment. Further explanation of tuition and fee refunding may be found at: registrar.siu.edu/schedclass.

Students who officially withdraw from school by the specific withdrawal deadline will receive a credit to their University account. Immediate cash refunds are not given for withdrawal from the University, reduction in credit-hour loads, or overpayment of account. The Bursar processes refunds at least once a week (twice a week during the week before the start of a semester and the first week of a semester) from an automated listing reflecting those accounts with a credit balance. No refunding of tuition and fees is made for a withdrawal occurring after the deadlines, except as described in the section titled Tuition and Fee Refund Policy and Procedures.

Special consideration is extended to individuals who leave school for extended military service (six months or longer). These students may choose to withdraw completely. If withdrawing during the third through tenth weeks of school, these students may receive *WMS* grades in all classes, with the appropriate refund. When the withdrawal occurs after the tenth week, students will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits students must remain in school to within 10 days of their military reporting date.

Students in military service with the State of Illinois pursuant to the orders of the Governor have the right to receive a full monetary credit or refund for funds paid to any Illinois public university, college or community college if the person is placed into a period of military service with the State of Illinois in the event of state emergencies pursuant to the orders of the Governor and is unable to attend the university or college for a period of seven or more days. Students may elect to receive course credit for all of their courses rather than a refund.

Withdrawal from the University does not relieve the student from housing contract obligations. Each student who has a contract with the University must contact University Housing and resolve the contract issue with that office.

All students seeking a withdrawal must contact the Registrar's Office in person or by mail. The effective date of the withdrawal is based on the date the student initiates the withdrawal process, provided the student completes the requirements for the withdrawal. Incomplete applications for withdrawal will be denied. Any student who fails to comply with the withdrawal procedures will receive grades for the semester and must satisfy the financial obligations for the semester.

Alternative Credit Opportunities

The University offers you a wide variety of programs on all higher educational levels. Specialized programs are available on the associate and baccalaureate levels. In addition, the University gives attention to ways it might better serve present-day educational needs. Described below are opportunities for you to earn credit through means other than the traditional classroom method. While greater flexibility is the goal, the University exercises appropriate supervision to ensure the flexibility is accompanied by educational soundness.

Credit by Means Other than Classroom Attendance

Credit for Military Experience

In order to receive credit for military service, active military personnel and veterans must present an official copy of the Joint Service Transcript (JST), AARTS, SMART, CGI, Reserves, and/or CCAF transcript.

Military transcripts are sent directly to:
Southern Illinois University Carbondale
Evaluations, Registrar's Office
Student Services Building, Mail Code 4725
1263 Lincoln Drive, Room 0382

Carbondale, IL 62901

Active Duty students, or students who have served one year or more of active duty and have received an Honorable or General Discharge, may receive two hours of ROTC credit, two hours of physical education credit, and two hours of health education credit. Completion of basic training only will be awarded two hours of physical education credit. Service for six months to one year may result in two hours of freshman ROTC credit and two hours of physical education. If the student has separated or retired from the military, then discharge separation papers and/or a DD214 must also be sent to Evaluations. A Member-4 or Service-2 copy of the DD214 is required in order to show the character of service.

Credit will be accepted for Defense Activity for Non-Traditional Education Support (DANTES) subject standardized examinations within the limitations enforced for proficiency credit. The web address for more information on DANTES Credit is: <http://articulation.siu.edu/>. No credit is allowed for college-level GED tests. The recommendations of the American Council on Education (ACE) as set forth in the U.S. Government bulletin, Guide to the Evaluation of Educational Experiences in the Armed Forces, are followed in evaluating credit possibilities based upon formal service-school training programs.

High School Advanced Placement Program (AP)

Through the High School Advanced Placement Program, high school students who are qualified through registration in an advanced placement course in their high schools or through other special educational experiences may apply for advanced placement and college credit through the Advanced Placement Program of the College Board. To receive credit, students must earn at least a grade of 3 and in some cases a 4 or 5. Transcripts from the Advanced Placement Program must be sent to Southern Illinois University Carbondale, Transfer Student Services, Student Services Building, Mailcode 4725, 1263 Lincoln Drive, Room 0382, Carbondale, IL 62901.

Transfer students who have AP credit transcribed as college courses from their previous institution will receive that course credit at SIU as transfer credit. The maximum credit granted through advanced placement examinations is thirty hours (fifteen for an associate degree).

It is nontraditional credit, does not carry a grade, and is not used in computing the students' grade point average. The thirty-hour limit also includes any CLEP credit or proficiency credit that has been earned. Advanced classes, which qualify for this purpose, are offered in many high schools in specific subjects such as English composition, economics, foreign languages, history, biology, computer science, chemistry, government, mathematics, physics, and psychology. A national examination is given in each subject with the examinations administered through the Educational Testing Service. The examinations are prepared by a national committee of high school and college teachers and intended to measure the achievement of the student and determine at what point the student should begin college work in the subject.

The credit to be granted at Southern Illinois University Carbondale is determined by the appropriate academic department. Any credits earned will appear on the student record as transfer work. The following is a list of exams and the credit that can be received. A score of three is required unless otherwise noted.

The AP Capstone Program

AP Capstone is an innovative program that equips students with the independent research, collaborative teamwork, and communication skills that are increasingly valued by colleges. AP Capstone is built on the foundation of two new AP courses - AP Seminar and AP Research-and is designed to complement and enhance the in-depth discipline-specific study provided through AP courses. The AP Capstone curriculum fosters inquiry, research, collaboration, and writing skills through the intensive investigation of topics from multiple perspectives. Students who earn scores of 3 or higher in both of the AP Capstone courses and four additional AP Exams of their choosing will receive the AP Capstone Diploma. Students who earn scores of 3 or higher in both of the AP Capstone courses but not on the four additional AP Exams will receive the AP Seminar and Research Certificate, signifying successful performance in those courses. [View the AP Exam and SIU Equivalents here.](#)

Students entering SIU having earned either the Diploma or the Certificate will receive the following credits in addition to any credits awarded on the basis of their AP exams:
ENGL 120H, Honors English Composition (six hrs.)

UNIV 101U, Foundations of Inquiry (three hrs.)

Advanced UCC Substitution Credit in the area most closely related in their Research project (three hrs.)

International Baccalaureate Program (IB)

The International Baccalaureate Diploma Program sponsored by the International Baccalaureate Organization is a comprehensive and challenging two-year course of study for students of senior high school age leading to final examinations in six subject areas. The Higher Level (HL) courses represent a recommended 240 teaching hours. Students who do not satisfy the requirements of the full Diploma Program or who have elected to take fewer than six subjects are awarded a certificate for the examinations completed. [View the IB Diploma Program Equivalency Credit chart here.](#)

SIU will award proficiency credit to students who have passed the Higher Level (HL) exams with the appropriate scores as indicated in the following chart. No credit is awarded for Standard Level (SL) courses. Upon receipt of test scores, the appropriate number of credit hours will be entered on the student's record. If test scores for new freshmen are received after orientation/registration, the student will need to work with their academic advisor to ensure duplicate courses are not taken.

For more information, please see the International Baccalaureate Organization's website at: <http://www.ibo.org>.

IB Transcripts may be ordered from the following address:

ATTN: Transcript Officer, International Baccalaureate American Global Centre
7501 Wisconsin Ave., Suite 200 West
Bethesda, MD 20814

The transcript scores should be sent to:

Transfer Student Services
Southern Illinois University Carbondale
Student Services Building, Mail Code 4725
1263 Lincoln Drive, Room 0382
Carbondale, IL 62901

College Level Examination Program (CLEP)

Southern Illinois University awards credit for satisfactory performance on both the General Examinations and the Subject Examinations developed and administered through the College Level Examination Program Board www.collegeboard.org. The General Examinations cover comprehensive content of a study which would be covered by several introductory-level courses, while the Subject Examinations cover more specific content of a single college-level course.

These exams allow students who have acquired knowledge outside the traditional classroom setting - through independent study, on-the-job training, or cultural inquiry - to gain recognition of mastering college-level material by receiving introductory course credit.

Through the College Level Examination Program (CLEP) students may apply for credit, which may substitute for one or more SIU courses. The minimum required scores and the credit awarded for each CLEP exam are listed. [The exams listed here are the only CLEP exams which will be accepted for credit.](#)

If prior to taking a CLEP examination the student has received a grade (including a W or an audit) or has enrolled in college-level work in any discipline included in the CLEP exam (see below) they shall be ineligible for credit. (Military credit does not constitute prior coursework). One exception to this rule is made if the course the student took in a discipline from a CLEP exam was taken more than five years prior and no credit was awarded for the course.

The Natural Sciences General examination includes the disciplines of plant biology, microbiology, physiology, zoology, chemistry, physics, geography and all SIU University Core Curriculum science courses.

The Social Sciences and History General examination includes the disciplines of western civilization, American history, Afro-Asian civilization, world history, political science, economics, anthropology, geography, sociology, social psychology, social studies, and all SIU University Core Curriculum social science courses.

The Humanities General examination includes the disciplines of literature, poetry, fiction, drama, non-fiction, creative writing, films, p

The College Composition General examination disciplines includes rhetoric; composition, creative writing and all English prefix courses.

The College Mathematics disciplines include all college-level mathematics courses.

The Foreign Language disciplines include all college-level courses in the corresponding foreign language.

Students may be exempted from all University Core Curriculum requirements if they: (a) meet the minimum required scores for the five CLEP general examinations; Natural Sciences, Social Sciences and History, Humanities, College Composition and College Mathematics, prior to completion of 12 semester hours of college-level credit and (b) complete the graduation option of the University Honors Program. Further information is available from the director of the University Honors Program.

Transfer students who have CLEP credit transcribed as a college course from their previous institution, with the exception of English Composition, will receive that course credit at SIU as transfer credit.

Students who transfer with an AA or an AS degree from an Illinois Community College will receive credit for their English Composition CLEP if it is transcribed as a course from that institution.

CLEP credit will not be recorded on the student's SIU transcript until the student has earned 12 hours of credit with a minimum grade average of C grade or above in residence at SIU.

A maximum of thirty hours of proficiency credit, including CLEP, Advanced Placement, departmental and Core Curriculum proficiency exams, will be accepted toward a Bachelor's degree (fifteen hours toward an associate degree).

CLEP credit does not apply toward the residence requirement for graduation.

For further information, students should consult with their academic advisor.

Proficiency Examinations

Through its proficiency examination program, the University recognizes the importance of providing encouragement for academically talented students. Such students are permitted to make application to demonstrate the mastery of certain courses through proficiency examinations. Application forms are available at the departmental offices.

The following general rules govern the proficiency examinations for undergraduate credit:

1. Students who believe they are qualified to take a proficiency examination should check with the department offering the course to determine their eligibility to do so. Students scoring in the top ten percent of ACT are particularly encouraged to avail themselves of this opportunity.
2. Credit not to exceed thirty hours (fifteen hours toward an associate degree), including credit through the College Board Advanced Placement Program and the College Level Examination Program, may be earned through proficiency examinations. Credit will be considered nonresident. A combined total of 40 hours may be earned through proficiency examinations and credit for work experience.
3. All University Core Curriculum courses are available for proficiency credit, subject to specified restrictions.
4. Upon passing proficiency examinations, students are granted course credit and receive a Pass grade. Their records will show the name of the course, the hours of credit granted, and the notation "credit granted by proficiency examination." Students who fail a proficiency examination receive a Fail grade. This results in no penalty to the students. They will not receive credit and there will be no official record regarding the proficiency examination. However, the proficiency examination grade report form will be in the student's file for reference purposes.
5. Students may not take proficiency examinations for the same course more than one time. Neither may they take a proficiency examination in a course in which they have previously received a grade. Students who are registered for a course may not receive credit by proficiency examination for that course unless they withdraw from the course by the date during the semester, which would result in no course entry appearing on the transcript. This date is the end of the second week for a regular semester course, and a correspondingly shorter period for summer session or short courses. Individual departments may require the proficiency examination to be completed in advance of this date.
6. Credit granted by proficiency examinations taken at SIU as resident credit requires the student to have earned at least 12 hours of credit of C grade or above in residence at the University.
7. Proficiency credit received as transfer work is posted to the record upon receipt.

Credit for Work Experience

Southern Illinois University Carbondale recognizes that there might well be a number of undergraduate programs for which work experience has a meaningful relationship. It therefore permits those undergraduate programs to grant credit for work experience that relates to the students' areas of specialization. The credit granted is to apply to the major program and is awarded only upon approval by the major departments. Credit earned by work experience is limited to 30 hours. Any combination of credit for proficiency examinations, AP, CLEP and work experience is limited to 40 hours. Credit granted for work experience is considered non-resident credit when granted for work that is not part of a regular instructional course. Students should consult with their major departments to see whether they approve credit for work experience.

Second Bachelor's Degree

Dual Degree

A student may earn two different degrees (e.g., B.A. and B.S.) at the same time by having completed the requirements for each degree and a total of at least 150 semester hours. An application for graduation must be submitted for both degrees. Students officially enrolled in a dual degree program who, for any reason, choose to graduate with a single bachelor's degree after having completed more than one-half of the requirements for the second degree will be granted seven years beyond the date of initial graduation for purposes of completing requirements for the second degree. It shall be the student's responsibility to monitor the passage of time and to complete degree requirements by the official deadline. The University assumes no responsibility for notifying students of pending deadlines.

Second Bachelor's Degree

A student may earn a second bachelor's degree upon completion of a minimum of 30 hours, making a total of 150 hours minimum, provided the student fulfills the requirements of the department or school and college for the second bachelor's degree. A prior bachelor's degree fulfills the Core Curriculum requirement. If a student's first bachelor's degree is from another university, 30 hours in residence is required to fulfill the requirements for the second bachelor's degree. If the first bachelor's degree was earned at the University, a minimum of 10 semester hours must be taken in residence at the University.

Three-Year Baccalaureate Degree Program

It is possible to complete a baccalaureate degree program in three years by utilizing proficiency examinations. The equivalent of one year of credit (30 semester hours) may be earned by this method. If you desire to follow the three-year program you should make that fact known to your academic advisor at the earliest possible date so that your eligibility can be determined. A combination of programs may be employed to accumulate these 30 hours as described above in the section on Credit by Means Other than Classroom Attendance.

Admission Policies, Requirements, Procedures

Policies and procedures for admission are presented in the admissions sections. Definitions of each category of admissions are included along with procedures needed to follow to complete your undergraduate admission application.

Applying for Admissions

You may obtain an application one of several ways. Apply on-line at: admissions.siu.edu. Request an Application for Undergraduate Admission from Undergraduate Admissions, Mail Code 4710, Southern Illinois University Carbondale, Carbondale, Illinois, 62901, phone 618/536-4405 or email admissions@siu.edu or download a printable application at: admissions.siu.edu. The application requires a \$40 non-refundable fee. The admission application cannot be processed until the application fee is received. The fee must be paid using a credit card if applying online and by check or money order if using the paper application.

The application term may be changed one time per application, provided the request is made prior to the start of the original application term.

The University closes admission to some programs whenever the availability of faculty or facilities necessitates such closures. The University also stops accepting admission applications from freshmen whenever the availability of the University resources dictates this action.

If you are a transfer student you can be considered for any future term. Transfer students who intend to transfer to Southern Illinois University Carbondale before completing one year of study may be admitted prior to completing their transfer work if they qualified for admission as beginning freshmen.

As part of its admission process, the University requires applicants to answer a series of “Public Safety Questions” eliciting information about prior criminal convictions, pending criminal charges, and disciplinary suspensions from other colleges or universities. If a positive response is given to one or more of these Public Safety Questions, the applicant is asked to provide supplemental information and to authorize the University to conduct a criminal background check if deemed necessary. The University requires this information to help ensure a safe environment for all members of our community and their property and to evaluate the character, maturity, and responsibility of its applicants. Information obtained from the applicant and through the criminal background check will be evaluated and may serve as a basis to deny admission or to impose specific conditions on admission. Providing false or inaccurate information relative to the applicant’s criminal or disciplinary history may result in denial of admission. The existence of a conviction, pending criminal charges or previous disciplinary suspension does not necessarily mean that a student will be denied admission to the University. Each case will be evaluated on its facts.

Applications are reviewed by representatives of the University’s various academic units and a University Admissions Review Committee, which make recommendations to the office of Undergraduate Admissions. All appeals are initiated through Undergraduate Admissions. Further appeals should be directed to the Director of Admissions. Appeals beyond the Director of Admissions should be directed to the Provost. Decisions by the Provost are final.

Documents required to process an application for admission

All students need a completed Application for Undergraduate Admission accompanied by the \$40 non-refundable application fee.

New first time freshmen and transfers with less than 26 semester hours

1. Official High School Transcripts, GED test scores, High School Equivalency Test scores, or Test Assessing Secondary Completion scores.
2. ACT or SAT scores. Must have official ACT scores sent to the University from ACT, Inc., Box 451, Iowa City, Iowa 52240, www.act.org or their official SAT scores sent to the University from the College Board SAT Program, PO Box 6200, Princeton, New Jersey 08541, www.collegeboard.com.

Transfer Students (including those with less than 26 semester hours)

1. Official transcripts from each institution of post-secondary education attended, even if no credit was earned. Transcripts must be issued within last 30 days.

Programs Requiring Additional Materials or Screening

In addition to the undergraduate admission application and the required educational records, some programs require applicants to submit other materials. If other materials are needed, the student will receive information and instructions from their intended major after admission to the University.

The following majors require that students be screened beyond the regular SIU Carbondale admission requirements before entering directly into the programs: architectural studies, automotive technology, aviation flight, aviation management, business and administration, College of Engineering majors, dental hygiene, public safety management, music, physical therapist assistant, and radiologic sciences.

In most cases, students may apply for any major in any term. However, a few majors at SIU permit new students to enter in the fall semester only. They are: architectural studies, dental hygiene, fashion design

and merchandising, interior design, physical therapist assistant and radiologic sciences. For transfer students, admission to architectural studies and interior design in spring or summer will be considered individually.

Mortuary Science and Funeral Service offers major courses beginning in the fall only, but will permit students to begin in the spring and summer terms to take non-major courses.

Grading

Grading and Scholastic Regulations

Grading System Explanation

The grades of *A*, *B*, *C*, *D*, *F* and *WF*, are included in determining student grade point averages.

An *INC* is assigned when, for reasons beyond their control, students *engaged in passing work* are unable to complete all class assignments. An *INC* must be changed to a completed grade within one semester following the term in which the course was taken, or *graduation*, whichever occurs first. Should the student fail to complete the course within the time period designated, that is, by no later than the end of the semester following the term in which the course was taken, or graduation, whichever occurs first, the incomplete will be converted to a grade of *F* and the grade will be computed in the student's grade point average. Students should not re-register for courses in which an *INC* has been assigned with the intent of changing the *INC* grade. Re-registration will not prevent the *INC* from being changed to an *F*. *"Effective with the Summer 2017 term, the standard letter grading system is being modified to allow the use of plus/minus grading. In addition to A, B, C, D, and F, the following are the allowable plus/minus grades with their grade points per hour: A- (3.667), B+ (3.333), B- (2.667), C+ (2.333), C- (1.667), and D+ (1.333)."*

Grade Symbol	Definition	Grade Points Per Hour
A	Excellent	4
B	Good	3
C	Satisfactory	2
D	Poor	1
F	Failure	0
WF	Failure. For student who did not officially withdraw from class, ceased attending and failed to complete requirements for the course.	0
P	Pass. Used only in Pass/Fail system. See Grading System Explanation below.	
PR	Work in Progress. See Grading System explanation below.	
W	Authorized withdrawal.	
INC	Incomplete. See Grading System Explanation above.	
AU	Audit. No grade or credit earned. See below.	
NS	Student failed to show up for the class and will result in the registration being removed.	
NR	Grade not yet recorded by instructor.	

Students enrolling for an *Audit* must designate their intent to enroll on an *Audit* basis at the time of registration, or prior to the end of the second week of a sixteen-week semester and prior to the end of the second week of an eight-week summer session. An equivalent prorated amount of time would be allowed for courses of shorter duration. Students registering for short courses must register for *Audit*

prior to the beginning of those classes. Students registering for a course on an *Audit* basis receive no credit. Auditors' Course Request Forms must be marked accordingly, and they pay the same fees as though they were registering for credit. They are expected to attend regularly and to determine from the instructor the amount of work expected of them. If auditing students do not attend regularly, the instructor may determine that the student should not have a satisfactory (*AU*) audit grade. If the audited class is unsatisfactory, a grade of *UAU* will appear on the student's transcript.

PR is an authorized grade for specifically approved undergraduate courses. For example, it is used for the required University Core Curriculum English 101, which is a course that has been designated as one in which students must receive a grade of *C* or better. The grade is given only to students who regularly attend class and attempt to complete the required work. The grade is to be used only once per student for any given course. The course provides additional instruction for those students not making adequate progress. Students who receive a *PR* grade must re-register for the course within a time period not to exceed a year from the end of the semester in which the course is taken. The grade earned in the course for which the student re-registers will be included in the grade point average. Failure to complete the course within the year will result in the *PR* automatically becoming an *F*. The *F* will be included in grade point computation.

Pass/Fail Grading System

Certain courses, which, in the judgment of the department or program, have been determined to be inappropriate for the traditional grading system are designated as Mandatory Pass/Fail. Courses, which carry this designation, include the words Mandatory Pass/Fail at the end of the course descriptions in the Undergrad Programs section. For courses taken on a Mandatory Pass/Fail basis, completed grades will be either a grade of *P* when the student's work is satisfactory or the grade of *F* when the student's work is unsatisfactory. The grade of *P* is not included in the grade point average but the hours earned apply toward graduation. The grade of *F* is computed in the grade point average as a failure but no hours of credit are earned. If a student receives an *INC* in a Mandatory Pass/Fail course, the same regulations apply for completion of the work as apply for all other grades of *INC*, as explained in the Grading System Explanation above.

In addition to the Mandatory Pass/Fail courses, an Elective Pass/Fail grading policy was in effect through the end of Spring Semester, 1987. The regulations concerning the discontinued policy appear in the 1986-1987 Undergraduate Catalog.

Changing of Grades

Grades given at the end of a course are final and may not be changed by additional work or submitting additional materials. When work is completed for a course in which an *INC* grade has been given, instructors notify the Registrar's Office of that fact, along with the final grade to be given, by processing a Grade Change Card through the academic dean's office.

Occasionally, students may wish to question grades given, either for accuracy or for removal of grades in situations when they were unable to perform some required step for reasons beyond their control. Only the assigned instructor for a course has the authority to change a grade except in the instance when the University no longer employs the instructor. Extenuating circumstances, which transcend faculty judgment of the instructor, may be appealed through procedures established by the instructor's school or college. Matters related to faculty judgment in grading may not be appealed. Any change of grade must be approved and signed not only by the instructor but also by the departmental chair and the dean of the academic unit. In the case of an *INC* being changed to a final grade, only the instructor's signature is required.

Repeat Policy

For students receiving a letter grade of *A*, *B*, *C*, *D*, or *F*, the course repetition must occur at Southern Illinois University Carbondale. Only the most recent (last) grade will be calculated in the overall GPA and count toward hours earned even if that grade is an *F*.

This policy will be applied to all transferable credit in that only the last grade will be used to calculate grade point average for those courses taken at the same institution. The appropriate repeat policy will be applied to work completed during that period of registration for the purpose of calculating the transfer grade point average.

Grade Point Average and Scholastic Standing

The matter of scholastic standing is quite often of importance to students both while in school and later when they present a transcript of their educational record in support of their application for employment or additional schooling.

At the end of each semester or session of attendance, SalukiNet is updated for each student showing, in addition to the grades earned that semester or session, the scholastic standing and the grade point average for that semester or session and for the overall record at Southern Illinois University Carbondale. It is important that you understand the University's system for computing grade point averages and the various grade point average requirements.

Transferred grades are not to be used in determining students' calculated SIU grade point averages, except that transfer students who are admitted on probationary status will be required to earn a 2.0 average semester by semester before they can be removed from probation.

The significance of the above should be clearly understood by transfer students when studying the general baccalaureate degree requirements. A 2.0 (C) average is required for the work taken at this University.

In computing a student's grade point average (GPA), all grades of A, B, C, D, F, and WF are included in determining the number of quality hours. Each hour of these grades (one hour of A is worth four quality points) is given its numerical quality points, which are then divided by the total number of quality hours to determine the student's GPA. For further details about computing a GPA, see registrar.siu.edu/grades/gpa.

Scholastic Probation and Suspension System

Students are expected to make satisfactory progress toward a degree, certificate or other approved objective. To ensure that students are making progress, their records are checked against the regulations below.

Scholastic Probation

When a student's cumulative University average falls below a C average (2.0), the student will be placed on scholastic probation. A student on scholastic probation may continue enrollment at the University provided the student is not placed on scholastic suspension, which will occur if the student's subsequent term average is below 2.0. A student will be reinstated to good standing when the cumulative University average reaches 2.0 or above.

While on scholastic probation students may not enroll for more than 14 hours per semester unless approved to do so by the dean of their academic unit. Students employed full time may not register for more than eight hours without approval of the head of their academic unit. The academic unit within which the students are enrolled may establish other limitations. Students enrolled in programs for the military or students enrolled in programs with a weekend or evening format are not restricted to the eight-hour limit while on probation.

Transfer Students Admitted on Probation

Transfer students admitted on scholastic probation will remain in that status until they have earned at least a C average at Southern Illinois University Carbondale. If they earn below a C average for any session while on scholastic probation, they will be placed on scholastic suspension.

Scholastic Suspension

Students will be scholastically suspended from the University if they (1) fail to meet the requirements of their conditional or probational status or (2) are enrolled full time their first term of enrollment, and earn a GPA of 0.00. Students placed on Scholastic Suspension may seek reinstatement after a minimum of two semesters' interruption (excluding Summer session) but must furnish tangible evidence that additional education can be successfully undertaken. Continuing students (those suspended at the end of the immediate preceding term) may not change academic units, nor may those readmitted prior to the end of the normally required two semester period of separation from the University. Some academic units have scholastic requirements in addition to the overall University requirements listed here. Students must comply with the University requirements as well as those requirements applying to individual schools

and colleges. Appeals must be approved at the Office of the Provost and Vice Chancellor for Academic Affairs. Decisions by the Provost are final.

Positive and Negative Quality Points

Positive and negative quality points are assigned to grades above or below a C. There are two methods to figure points depending upon the information, which is available.

Grades. The SalukiNet grade report, which is updated at the end of each semester, lists the hours used in calculating the average and the quality points earned. Since C has a value of two quality points on a four point scale, quality points equaling a C average are exactly twice the number of quality hours. All quality points over that amount are positive quality points. All quality points under the amount are negative quality points.

For example:

Quality Hours		Quality Points		Grade Point Average
60	=	120	=	(C) 2.0

Twice the quality hours equals 120 quality points. This is a C (2.0) average. A student with 60 quality hours and only 115 quality points would have five negative points (1.92) average. A student with 30 quality hours and 55 quality points would have five negative points (1.83) average.

Grades and Hours of Credit Available. Whenever all grades and hours of credit are known and quality points have not been assigned as on SalukiNet, a simple method is to assign positive and negative points as follows:

- A = 2 positive points per hour
- B = 1 positive point per hour
- C = 0
- D = 1 negative point per hour
- F = 2 negative points per hour
- WF = 2 negative points per hour

For example:

3 hours of A x 2 positive points = 6 positive points
3 hours of B x 1 positive point = 3 positive points
3 hours of C x 0 points = 0
2 hours of D x 1 negative point = 2 negative points
4 hours of F x 2 negative points = 8 negative points
4 hours of WF x 2 negative points = 8 negative points

The eighteen negative points are balanced by only nine positive points so the sample has nine negative points.

Negative points are also used to easily determine exactly what grades must be earned to raise the average to C. For example, a student with eight negative points could raise the average to C by earning four hours of A grade or eight hours of B grade, assuming all other grades earned are at least C.

Class Standing

The University requires students to earn at least 120 semester hours of acceptable credit in order to receive a baccalaureate degree. For academic classification purposes a freshman is a student who has completed fewer than 26 hours; a sophomore, from 26 through 55; a junior, from 56 through 85; and a senior 86 or more.

Academic Load

The University considers 12 hours as the minimum number to constitute full-time attendance. Academic programs are designed for a four year completion; 15 credit hours a semester (fall and spring), or 30 credit hours a year. This is the figure used for enrollment reporting purposes on the undergraduate level. Academic load guidelines are as follows:

Load	Regular Semester	8-Week Summer Session
Minimum load for full time	12	6

Load	Regular Semester	8-Week Summer Session
Average Load	15-16	7-8
Maximum Load without deans' approval	18	9
Maximum Load ¹	21	11

¹This maximum may be exceeded by very special request of the respective academic dean and approval from the Office of the Provost for Academic Affairs. Rarely is this exception allowed more than once in the student's academic career.

Students on scholastic probation may not take more than 14 hours without approval of the dean of their academic unit. Students employed full-time at the University may not register for more than eight hours.

Credit

Unit of credit

The University is on the early semester calendar. All references to hours of credit in this catalog are to semester hours unless otherwise specified. One semester hour of credit is equivalent to one and one-half quarter hours. One semester hour of credit represents the work done by a student in a lecture course attended fifty minutes per week for one semester and, in the case of laboratory and activity courses, the stated additional time.

Core Curriculum

University Core Curriculum Goals

In 2005 the Association of American Colleges and Universities launched its LEAP campaign (Liberal Education and America's Promise). Central to this campaign are a set of learning objectives that SIU has adopted as its Core Curriculum Goals. For more on the LEAP campaign visit, www.aacu.org/leap.

1. Knowledge of Human Cultures and the Physical and Natural World

- Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

Focused by engagement with big questions, both contemporary and enduring

2. Intellectual and Practical Skills, including:

- Inquiry and analysis
- Critical and creative thinking
- Written and oral communication
- Quantitative literacy
- Information literacy
- Teamwork and problem solving

Practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance

3. Personal and Social Responsibility, including:

- Civic knowledge and engagement - local and global
- Inter-cultural knowledge and competence
- Ethical reasoning and action
- Foundations and skills for lifelong learning

Anchored through active involvement with diverse communities and real-world challenges

4. Integrative and Applied Learning, including:

- Synthesis and advanced accomplishment across general and specialized studies

Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems

University Core Curriculum Requirements

University Core Curriculum Requirements

Degree Requirements	Credit Hours
I. Foundation Skills	13
Foundations of Inquiry:	1
<p>Select either UNIV 100A, UNIV 100B, or UNIV 100C or UNIV 100C or one UNIV 101 course. Juniors or seniors may substitute UNIV 301 if they missed UNIV 101 as a first-year student. The "Foundations of Inquiry" Core Curriculum requirement applies undergraduate students first entering SIU in Summer 2012 or later, with fewer than 26 transferable hours earned after high school graduation excluding AP, CLEP, IB and proficiency credits. For students entering SIU from Summer 2012 through Spring 2015, this is a 3-credit hour requirement. For students entering SIU beginning in Summer 2015, this is a 1-credit hour requirement. Some programs require all students (regardless of Transferable hours) to take a specific Foundations of Inquiry course. These courses range from 1 to 3 credit hours. Students should check with their academic advisor to determine whether the program they wish to enter requires a specific UNIV 101 course. UNIV 101U is the standard section of UNIV 101.</p>	
Communication Studies 101	3
English Composition:	6
<p>Both ENGL 101 and ENGL 102 are to be completed with a grade of C or better. ENGL 120H, if completed with a grade of C or better, will complete the composition requirement. Linguistics LING 101 and LING 102, also to be completed with a grade of C or better, will satisfy the composition requirement for ESL students.</p>	
Mathematics:	3
<p>Select one course from the following: MATH 101, MATH 110, CS 215. Advanced University Core Curriculum courses: Any mathematics course designated by a number greater than 105 except</p>	

Degree Requirements	Credit Hours
for MATH 107, MATH 120, and MATH 300I (including courses cross-listed with AUCC Math courses).	
II. Disciplinary Studies	23
Fine Arts:	3
Select one course from the following: ARC 314I; AD 100A, AD 100B, AD 101; CP 101, CP 101H, CP 354I; ENGL 119, ENGL 119H, ENGL 206A, ENGL 307I; FL 200A, FL 200B, FL 200C; HIST 201; MUS 103, MUS 106; RTD 362I; THEA 101; UHON 351F.	
Advanced University Core Curriculum courses: ARC 231 and ARC 232 or ID 231 and ID 232; MUS 357A, MUS 357B; THEA 220.	
Human Health:	2
Select one course from the following: BIOL 202; HED 101; HND 101; KIN 101; PH 101; PHSL 201; REHB 205, REHB 205H; UHON 351L.	
Advanced University Core Curriculum courses: AH 241; KIN 201; PHSL 310.	
Humanities:	6
Select two courses from the following: AD 207A, AD 207B, AD 207C; CHIN 120A, CHIN 120B, CHIN 201A, CHIN 201B, CHIN 370; CP 358I; CLAS 130A, CLAS 130B, CLAS 133A, CLAS 133B, CLAS 201A, CLAS 201B, CLAS 202A, CLAS 202B, CLAS 230, CLAS 270, CLAS 271, CLAS 315I; EA 102, EA 300; ENGL 121, ENGL 121H, ENGL 204, ENGL 209; FL 120A, FL 120B, FL 220A, FL 220B, FL 370; GEOL 329H, GEOL 329I; GER 201A, GER 201B; HIST 101A, HIST 101B, HIST 358I; JPN 131A, JPN 131B, JPN 201A, JPN 201B, JPN 370; JRNL 334, JRNL 399; LING 200; MATH 300I; PHIL 102, PHIL 103A, PHIL 103B, PHIL 104, PHIL 105, PHIL 303I, PHIL 307I, PHIL 309I, PHIL 334, PHIL 399; SPAN 201A, SPAN 201B; UHON 351U.	

Degree Requirements	Credit Hours
Advanced University Core Curriculum courses: AD 358, AD 368; CLAS 304, HIST 207; PHIL 304, PHIL 305A or PHIL 305B, PHIL 340.	
Science: Select one course from each group. Lecture courses in Geology must be taken with the appropriate lab course. ¹	6
Group I Physical Science: CHEM 106; GEOG 104, GEOG 303I, GEOG 310I; GEOL 111, GEOL 112, GEOL 121 GEOL 124, GEOL 122 GEOL 123, GEOL 128, GEOL 129, GEOL 130, GEOL 131; PHYS 101, PHYS 103 UHON 351S.	
Advanced University Core Curriculum courses: CHEM 140A, CHEM 200 and CHEM 201, CHEM 200H and CHEM 201; GEOL 113, GEOL 220, GEOL 223, GEOL 221 GEOL 224, GEOL 222 and GEOL 223; PHYS 203A, PHYS 253A, PHYS 203B, PHYS 253B, PHYS 205A, PHYS 255A, PHYS 205B PHYS 255B, PHYS 305 and PHYS 355; SCI 210A	
Group II Life Science: ANTH 240A; PLB 115, PLB 117, PLB 301I; ZOOL 115.	
Advanced University Core Curriculum courses: BIOL 211, BIOL 212, BIOL 213; MICR 201; PHSL 201 and PHSL 208 (if not used for Human Health); PLB 200; SCI 210B; ZOOL 118, ZOOL 220.	
Social Science:	6
Select two courses in different disciplines from the following: ABE 300I, AGRI 300I, ANTH 104; CI 227; ECON 113, ECON 302I; FIN 200; FOR 125; GEOG 100, GEOG 103, GEOG 300I; HIST 110, HIST 112, HIST 205A,HIST 205B; JRNL 306I, JRNL 314I; LAC 300I; MCMA 200; POLS 114, POLS 213, POLS 250, POLS 314I, POLS 332I, POLS 372I; PSYC 102; SOC 108, SOC 306I; UHON 351O; WGSS 286; ZOOL 312I.	
Advanced University Core Curriculum courses: ABE 204; ECON 240, ECON 241; EDUC 214; HIST 301.	

Degree Requirements	Credit Hours
III. Integrative Studies:	3
Students are strongly advised to complete their Disciplinary Studies courses before enrolling in the Integrative Studies courses.	
Multicultural / Diversity: Improving Human Relations:	3
Select one course from the following: AD 227, AD 267, AD 307I, AD 317I; AFR 215, AFR 227, AFR 303I; ANTH 202, ANTH 204, ANTH 298; CMST 201, CMST 301I; CCJ 203; ENGR 304I; ENGL 205 and ENGL 212; ENGL 301I; FR 200; HIST 202, HIST 212; KIN 210; LING 201, LING 320I; MCMA 204; MUS 203, MUS 303I; PHIL 210, PHIL 211, PHIL 308I; POLS 215, POLS 352I; PSYC 223, PSYC 233; SOC 215, SOC 223, SOC 304I; UHON 351M; WGSS 200, WGSS 201, WGSS 223, WGSS 233, WGSS 301I, WGSS 303I, WGSS 307I, WGSS 320I.	
Advanced University Core Curriculum courses: AFR 325; DH 417; EDUC 211; ENGL 225, ENGL 325; HIST 300, HIST 368; WGSS 225.	
Total	39
Some programs and upper division academic units require specific Core Curriculum courses. A student may determine these requirements by referring to specific major requirements.	

Catalog Year Prior to Summer 2012

Students whose catalog year is prior to Summer 2012 are not required to take a Foundations of Inquiry course. These students are required to take a 3 credit hour Interdisciplinary course from the list below. Most of these courses also satisfy Core requirements in other areas, as indicated in the lists above. But no course can be used to satisfy more than one Core Curriculum requirement.

Degree Requirements	Credit Hours
Interdisciplinary	3
Select one course from the following: AFR 303I, AGRI 300I, ARC 314I, AD 307I, AD 317I, CP 354I, CP 358I, CLAS 315I, CMST 301I, ECON 302I, ENGL 307I, ENGR 301I, ENGR 303I, ENGR 304I, FL 301I, GEOG 300I, GEOG 303I, GEOG 310I, GEOL 327I, GEOL 328I, GEOL 329I, GEOL 330I, HIST 358I, JRNL 306I, JRNL 314I, LAC 300I, LING 320I, MATH 300I, MUS 303I, PHIL 303I, PHIL 307I, PHIL 308I, PHIL 309I, PLB 301I, PLB 303I, POLS 314I, POLS 332I, POLS 352I, POLS 372I, RTD 362I, SOC 304I, SOC 306I, UHON 351I, WGSS 301I, WGSS 307I, WGSS 320I, ZOOL 312I.	

Meeting University Core Curriculum Requirements

Core Curriculum requirements may be met by any of the following, subject to the rules and limitations listed:

1. Completion of Core Curriculum (or Advanced Core Curriculum courses) with a satisfactory grade. Each student must complete the Foundation courses (Composition, Foundations of Inquiry, Speech, Mathematics) or their approved Advanced Core courses prior to or upon completing 56 semester hours of coursework. The student, working with the academic advisor, shall have the responsibility of meeting this requirement.
2. Completion of an associate degree in a baccalaureate-oriented program (A.A. or A.S.) from an accredited Illinois public two-year institution; completion of an A.A. from an accredited Missouri public two-year institution; or completion of an A.A. or A.S. from a Kentucky Community and Technical College System institution. The student will: (a) be admitted to the University with junior standing if enrollment occurs after earning the associate degree and prior to coursework being attempted at another institution and, (b) be considered to have completed the University Core Curriculum requirements for general graduation purposes.
3. Other associate's degrees will be reviewed by Transfer Student Services. If the degree is determined to be baccalaureate-oriented and to have comparable content and credit hour criteria, the same benefits will be extended to those graduates.
4. Transfer students may satisfy the requirements of the University Core Curriculum by successful completion of the Illinois Transferable General Education Curriculum. Transfer students who have not completed all Core Curriculum requirements prior to enrolling at SIU can have their transcripts evaluated and comparable courses will be applied toward the University Core Curriculum or the IAI General Education Core Curriculum requirements on a course-by-course basis. A student must have a minimum of 30 semester hours of transfer credit prior to enrollment at SIU in order to be eligible to complete the IAI GECC in lieu of the SIU UCC requirement subsequent to admission to the University.
5. Students who have received a bachelor's degree from an accredited institution will also be considered to have their University Core Curriculum complete. Additional information concerning admission of transfer students and the evaluation of transfer credit can be found in the sections of this catalog pertaining to those specific programs. ([See admission and University Core Curriculum and Transfer Students](#) in this site for more information on transfer of courses.)
6. Proficiency credit by examination for Core Curriculum courses or Advanced Core courses. All Core Curriculum courses are eligible for proficiency credit, subject to specified restrictions. (See [proficiency examinations](#).) Students should contact the individual department for specific information. Completion of courses listed as Advanced Core courses are limited to 12 hours.
7. Proficiency credit via General Examinations of the College Level Examination Program (CLEP) or Advanced Placement (AP). Credit given through the High School AP or CLEP examinations will be nonresident, will not carry a grade, and will not be used in computing the student's grade point average. The credit will be validated after 12 hours of C grade or better in residence at Southern Illinois University Carbondale. A \$33 charge will be assessed for proficiency examinations taken at Testing Services.
8. No Core course or Advanced Core course may satisfy more than one requirement, nor may any Advanced Core course in combination with the Core course for which it substitutes be used to satisfy a Core requirement.

List of Advanced Core Courses.

The following courses for the major have been approved for the University Core Curriculum requirement.

In no case does an Advanced Core course satisfy more credit hours than the credit hours allowed in a comparable University Core Curriculum course. Under no circumstances can a Core course satisfy more than one Core requirement. Students should consult their academic advisors concerning any prerequisite for these courses.

Core Curriculum	Advanced Core Curriculum Courses
AD 207A	AD 358
AD 207A	AD 368
CHEM 106	CHEM 140A or CHEM 200 or CHEM 201 or CHEM 200H and CHEM 201
DH 298	DH 417
ECON 113	ECON 240, ECON 241 or ABE 204
ENGL 205	AFR 325, EDUC 211, ENGL 225, ENGL 325 or WGSS 225

Core Curriculum	Advanced Core Curriculum Courses
GEOL 111/GEOL 112	GEOL 220 and GEOL 223, GEOL 221 and GEOL 224, GEOL 222 and GEOL 223; GEOL 113 may be substituted for any of the lab sections.
HIST 101A, HIST 101B	HIST 207
HIST 110	EDUC 214, HIST 301
HIST 202	HIST 300, HIST 368
KIN 101	KIN 201
MATH 110	Any Mathematics course designated by a number greater than MATH 105 except for MATH 107, MATH 120, and MATH 300I.
MUS 103	MUS 357A or MUS 357B
PHIL 102	CLAS 304, PHIL 304 or PHIL 305A or PHIL 305B
PHIL 104	PHIL 340
PHSL 201	AH 241
PHYS 101/PHYS 103	PHYS 203A and PHYS 253A; PHYS 203B and PHYS 253B; PHYS 205A and PHYS 255A; PHYS 205B and PHYS 255B; PHYS 305 and PHYS 355
PLB 115	BIOL 211 or BIOL 213; MICR 201, PHSL 201 and PHSL 208 (if not used for Human Health), PLB 200, ZOOL 118
THEA 101	THEA 220
ZOOL 115	BIOL 211 or BIOL 213, MICR 201, PLB 200, ZOOL 118
Fine Arts	ARC 231 and ARC 232 or ID 231 and ID 232
Science Group 1	SCI 210A
Science Group 2	SCI 210B or PHSL 201 and PHSL 208 (if not used for Human Health)

Courses

The first entry for each course is a three digit numeral plus, in some cases, a single letter which together with the subject area, serves to identify the course. The number followed by the dash represents the semester credit hours. Students are encouraged to use DegreeWorks (available through SalukiNet) to discover the core curriculum courses required for his/her catalog year and major.

I. Foundation Courses

Course	Title
CMST 101	Introduction to Oral Communication: Speech, Self, and Society.
ENGL 101	English Composition I.
ENGL 102	English Composition II.
ENGL 120H	Honors Advanced Freshman Composition.
LING 101	English Composition I for ESL Students.
LING 102	English Composition II for ESL Students.
MATH 101	Introduction to Contemporary Mathematics.
MATH 110	Non-Technical Calculus
CS 215	Discrete Mathematics
UNIV 100	Transfer Student College Planning
UNIV 100A	Foundations of Inquiry for Dual Admission Program Students: Part one of three.
UNIV 100B	Foundations of Inquiry for Dual Admission Program Students: Part two of three.
UNIV 100C	Foundations of Inquiry for Dual Admission Program Students: Part three of three.
UNIV 101A	Saluki Success.
UNIV 101B	Foundations of Inquiry for Business.
UNIV 101D	Foundations of Inquiry: Foreign Languages.
UNIV 101I	Foundations of Inquiry: Introduction to Agriculture, Food and Forestry.
UNIV 101J	Foundations of Inquiry: Careers in Music.

Course	Title
UNIV 101P	Foundations of Inquiry: Careers in Psychology.
UNIV 101T	Foundations of Inquiry in Aviation Technologies.
UNIV 101U	Saluki Success.
UNIV 101X	Foundations of Inquiry: Introduction to Information Assurance and Cybersecurity.
UNIV 301	Backpack to Briefcase

II. Disciplinary Studies

Fine Arts

Course	Title
AD 100A	Foundation Studio A.
AD 100B	Foundation Studio B.
AD 101	Introduction to Visual Culture
ARC 314I	Expressions in Architecture.
CP 101	Film History and Analysis.
CP 101H	Honors Film History and Analysis.
CP 354I	Mass Media Culture and American Studies.
ENGL 119	Introduction to Creative Writing.
ENGL 119H	Introduction to Creative Writing.
ENGL 206A	Literature Among the Arts: The Visual.
ENGL 307I	Film as Literary Art.
FL 200A	Masterpieces of World Literature-France and Francophone Countries.
FL 200B	Masterpieces of World Literature-Germany, Switzerland, Austria.
FL 200C	Masterpieces of World Literature-Spain.
HIST 201	Art, Music and Ideas in the Western World.
MUS 103	Music Understanding.
MUS 106	The History of Rock and Roll.
RTD 362I	Sound Art and Practice.
THEA 101	Theater Insight.
UHON 351F	Honors Seminar in Fine Arts.

Human Health

Course	Title
BIOL 202	Human Genetics and Human Health.
HED 101	Foundations of Human Health.
HND 101	Personal Nutrition.
KIN 101	Current Concepts of Physical Fitness.
PH 101	Foundations-Human Health.
PHSL 201	Human Physiology.
REHB 205	Disability and Chronic Disorders.
REBH 205H	Disability & Chronic Disorders Honors.

Humanities

Course	Title
AD 207A	Introduction to Art History I.
AD 207B	Introduction to Art History II.
AD 207C	Introduction to Art History III.
CHIN 120A	Elementary Chinese.
CHIN 120B	Elementary Chinese.
CHIN 201A, B	Intermediate Chinese.
CHIN 370	Contemporary China.

Course	Title
CLAS 130A,B	Elementary Classical Greek.
CLAS 133A,B	Elementary Latin.
CLAS 201A, B	Intermediate Greek.
CLAS 202A, B	Intermediate Latin.
CLAS 230	Classical Mythology.
CLAS 270	Greek Civilization.
CLAS 271	Roman Civilization.
CLAS 315I	Classical Themes and Contemporary Life: Seminar Series.
CP 358I	Introduction to Peace Studies.
EA 102	East Asian Civilization.
EA 300	Masterpieces of East Asian Literatures.
ENGL 121	The Western Literary Tradition.
ENGL 121H	The Western Literary Tradition Honors.
ENGL 204	Literary Perspectives of the Modern World.
ENGL 209	Introduction to Genre.
FL 120A, B	Beginning Sign Language.
FL 220A, B	Intermediate American Sign Language.
FL 370	Deaf Culture.
GER 201A, B	Intermediate German: Cultural Encounters.
GEOL 329H	Geomythology Honors.
GEOL 329I	Geomythology.
HIST 101A	The History of World Civilization I-To Industrialization.
HIST 101B	The History of World CivilizationII-Since the Age of Encounter.
HIST 358I	Introduction to Peace Studies.
JPN 131A, B	Elementary Japanese.
JPN 201A,B	Intermediate Japanese.
JPN 370	Contemporary Japan.
JRNL 334	Ethics in Media, Culture and Society.
JRNL 399	First Freedoms.
LING 200	Language, Society and the Mind.
MATH 300I	History of Mathematics.
PHIL 102	Introduction to Philosophy.
PHIL103A	World Humanities.
PHIL 103B	World Humanities.
PHIL 104	Ethics.
PHIL 105	Elementary Logic.
PHIL 303I	Philosophy and the Arts.
PHIL 307I	Philosophy of Science, Nature and Technology.
PHIL 309I	Philosophy of Peace, Law, and Justice.
PHIL 334	Ethics in Media, Culture and Society.
PHIL 399	First Freedoms.
SPAN 201A, B	Intermediate Spanish.
UHON 351U	Honors Seminar in Humanities.

Science

Course	Title
Group I.	
CHEM 106	Chemistry and Society.
GEOG 104	Weather, Climate, and Society.
GEOG 303I	Physical Geography.
GEOG 310I	Introduction to Geographic Information Systems.
GEOL 111	Geology and the Environment.
GEOL 112	Geology and the Environment Laboratory Learning.

Course	Title
GEOL 121	The History of the Earth.
GEOL 122	Natural Hazards and Catastrophes.
GEOL 123	Natural Hazards and Catastrophes Laboratory.
GEOL 124	History of the Earth Laboratory.
GEOL 128	The Dinosaurian World.
GEOL 129	DinoLab.
GEOL 130	The Planets.
GEOL 131	The Planets Laboratory Learning.
PHYS 101	Physics that Changed the World.
PHYS 103	Astronomy.
Group II.	
ANTH 240A	Human Biology: An Introduction to Biological Anthropology.
PLB 115	General Biology.
PLB 117	Plants and Society.
PLB 301I	Environmental Issues.
ZOOL 115	General Biology.

Social Science

Course	Title
ABE 300I	Social Perspectives on Environmental Issues.
AGRI 300I	Social Perspectives on Environmental Issues.
ANTH 104	The Human Experience-Anthropology.
CI 227	Intimate Relationships and Family Development.
ECON 113	Economics of Contemporary Social Issues.
ECON 302I	History and Philosophy of the World's Economic Systems.
FIN 200	Personal Finance.
FOR 125	Forestry and Natural Resource Conservation.
GEOG 100	Environmental Conservation.
GEOG 103	World Geography.
GEOG 300I	Geography, People and the Environment.
HIST 110	Twentieth Century America.
HIST 112	The Twentieth Century World.
HIST 205A	History of Western Civilization.
HIST 205B	History of Western Civilization.
JRNL 306I	International Media Systems.
JRNL 314I	American Politics and the Mass Media.
LAC 300I	Social Perspectives on Environmental Issues.
MCMA 200	Media and Information Literacy.
POLS 114	Introduction to American Politics.
POLS 213	State and Local Government.
POLS 250	Introduction to Comparative Politics.
POLS 314I	American Politics and the Mass Media.
POLS 332I	Introduction to Civil Liberties and Civil Rights.
POLS 372I	Politics of the Global Economy.
PSYC 102	Introduction to Psychology.
SOC 108	Introduction to Sociology.
SOC 306I	Popular Culture in Society.
WGSS 286	Intimate Relationships and Family Development.
ZOOL 312I	Conservation of Natural Resources.

III. Integrative Studies

Multicultural: Diversity in the United States

Course	Title
AD 227	History of African American Art.
AD 267	Picturing Difference: Native, African and European Americans in American Art.
AD 307I	Women in Visual Arts: Social and Educational Contexts.
AD 317I	Contemporary Native American Art: Anthropological Perspective.
AFR 215	Black American Experience in a Pluralistic Society.
AFR 227	History of African American Art.
AFR 303I	Women, Blues and Literature
ANTH 202	America's Diverse Cultures.
ANTH 204	Latino Cultures in America.
ANTH 298	Multicultural Applied Experience.
CCJ 203	Crime, Justice and Social Diversity.
CMST 201	Performing Culture.
CMST 301I	Communication Across Cultures.
ENGL 205	Cultural Diversity in American Literature.
ENGL 212	Introduction to American Studies.
ENGR 304I	Social History of American Technology.
FL 301I	Cross-Cultural Orientation.
FR 200	Women in French and Francophone Literatures.
HIST 202	America's Religious Diversity.
HIST 212	Introduction to American Studies.
KIN 210	Diversity in American Sport.
LING 201	Language Diversity in the USA.
LING 320I	Language, Gender and Power.
MCMA 204	Alternative Media in a Diverse Society.
MUS 203	Diversity and Popular Music in American Culture.
MUS 303I	Women, Blues and Literature
PHIL 210	The American Mind.
PHIL 211	Philosophy and Diversity: Gender, Race and Class.
PHIL 308I	Asian Religions: A Philosophical Approach.
POLS 215	Politics of Diversity in the United States.
POLS 352I	Ethnicity, Nationalism and Culture.
PSYC 223	Diversity in the Workplace.
PSYC 233	Psychology of Gender in a Diverse Context.
SOC 215	Race and Ethnic Relations in the United States.
SOC 223	Women and Men in Contemporary Society.
SOC 304I	Global Perspectives on the Family.
WGSS 200	Women in French and Francophone Literatures.
WGSS 201	Multicultural Perspectives on Women, Gender and Sexuality.
WGSS 223	Women and Men in Contemporary Society.
WGSS 233	Psychology of Gender in a Diverse Context.
WGSS 301I	Women in Science, Engineering and Technology.
WGSS 303I	Women, Blues and Literature.
WGSS 307I	Women in the Visual Arts: Social and Educational Contexts.
WGSS 320I	Language, Gender and Power.

Interdisciplinary

Course	Title
AD 307I	Women in the Visual Arts: Social and Educational Contexts.
AD 317I	Contemporary Native American Art: Anthropological Perspective.

Course	Title
AFR 303I	Women, Blues and Literature
AGRI 300I	Social Perspectives on Environmental Issues.
ARC 314I	Expressions in Architecture.
CLAS 315I	Classical Themes and Contemporary Life: Seminar Series.
CMST 301I	Communication Across Cultures.
CP 354I	Mass Media Culture and American Studies.
CP 358I	Introduction to Peace Studies.
ECON 302I	History and Philosophy of the World's Economic Systems.
ENGL 307I	Film as Literary Art.
ENGR 301I	Humans and Their Environment.
ENGR 303I	The Role of Energy in Society.
ENGR 304I	Social History of American Technology.
FL 301I	Cross-Cultural Orientation.
GEOG 300I	Geography, People and the Environment.
GEOG 303I	Physical Geography.
GEOG 310I	Introduction to Geographic Information Systems.
GEOL 327I	The World's Oceans.
GEOL 328I	Dinosaurs and the Age of Reptiles.
GEOL 329I	Geomythology.
GEOL 330I	The Planets.
HIST 358I	Introduction to Peace Studies.
JRNL 306I	International Media Systems.
JRNL 314I	American Politics and the Mass Media.
LAC 300I	Social Perspectives on Environmental Issues.
LING 320I	Language, Gender and Power.
MATH 300I	History of Mathematics.
MUS 303I	Women, Blues and Literature
PHIL 303I	Philosophy and the Arts.
PHIL 307I	Philosophy of Science, Nature and Technology.
PHIL 308I	Asian Religions: A Philosophical Approach.
PHIL 309I	Philosophy of Peace, Law, and Justice.
PLB 301I	Environmental Issues.
PLB 303I	Evolution and Society.
POLS 314I	American Politics and the Mass Media.
POLS 332I	Introduction to Civil Liberties and Civil Rights.
POLS 352I	Ethnicity, Nationalism and Culture.
POLS 372I	Politics of the Global Economy.
RTD 362I	Sound Art and Practice.
SOC 304I	Global Perspectives on the Family.
SOC 306I	Popular Culture in Society.
WGSS 301I	Women in Science, Engineering and Technology.
WGSS 307I	Women in the Visual Arts: Social and Educational Contexts.
WGSS 320I	Language, Gender and Power.
ZOOL 312I	Conservation of Natural Resources.

Multicultural Applied Experience Courses

Course	Title
ANTH 298	Multicultural Applied Experience.
AVM 298	Multicultural Applied Experience.
DH 298	Multicultural Applied Experience.
FL 298	Multicultural Applied Experience.
LING 298	Multicultural Applied Experience.
SOC 298	Multicultural Applied Experience.

Course	Title
WGSS 298	Multicultural Applied Experience Option.

Capstone Option

The Capstone Option is for the student who has earned or will soon earn an Associate in Applied Science (AAS) degree, Associate in Engineering Sciences (AES) degree, or equivalent certification and whose SIU major is one that participates in the option. The Capstone Option advantage allows students to complete an abbreviated University Core Curriculum (UCC) requirement of 30 hours rather than 39 hours.

Key features of the Capstone Option are:

1. gives occupational students who have changed their educational and occupational goals an opportunity to pursue a four-year degree;
2. is an alternative option to obtaining the four-year degree typically involving no more than two additional years of college;
3. seeks to recognize similar objectives in both two-year occupational programs and four-year baccalaureate degree programs; and
4. seeks to recognize similar objectives in certain work experiences and in four-year baccalaureate degree programs.

The baccalaureate degrees in the following academic colleges participate in the Capstone Option at Southern Illinois University Carbondale:

College of Agricultural Sciences

- Agribusiness Economics
- Agricultural Systems and Education
- Animal Science
- Crop, Soil and Environmental Management
- Horticulture
- Hospitality and Tourism Administration

College of Applied Sciences and Arts

- Automotive Technology
- Aviation Management
- Aviation Technologies
- Dental Hygiene
- Electronic Systems Technologies
- Fire Service Management (off-campus only)
- Health Care Management
- Information Systems Technologies
- Mortuary Science and Funeral Service
- Radiologic Sciences
- Technical Resource Management

College of Business

- Accounting
- Business and Administration
- Business Economics
- Finance
- Management
- Marketing

College of Education and Human Services

- Early Childhood-Child and Family Services
- Rehabilitation Services

- Workforce Education and Development

College of Engineering

- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Electrical Engineering Technology
- Industrial Management and Applied Engineering
- Mechanical Engineering
- Mining Engineering

College of Liberal Arts

- Paralegal Studies

Transfer Students

There are several different ways to complete Core Curriculum requirements:

1. Completion of an Associate in Arts or an Associate in Science degree at a public Illinois community college (see Compact Agreement below);
2. Completion of the "42 Hour Block" or an AA degree in a baccalaureate-oriented program in an accredited Missouri two-year institution that participates in the 42 Hour Block program will be considered to have completed the University Core Curriculum;
3. Completion of an associate degree in a baccalaureate-oriented program (A.A. or A.S.) from an accredited Illinois public two-year institution; completion of an A.A. from an accredited Missouri public two-year institution participating in the 42 Hour Block; or completion of an A.A. or A.S. from a Kentucky Community and Technical College System institution. The student will: (a) be admitted to the University with junior standing if enrollment occurs after earning the associate degree and prior to coursework being attempted at another institution and, (b) be considered to have completed the University Core Curriculum requirements for general graduation purposes;
4. Completion of the Illinois Transferable General Education Core Curriculum as certified by a participating Illinois Articulation Initiative institution;
5. Completion of SIU's Core Curriculum requirements; or
6. Admission to and completion of SIU's Capstone Option for students with an AAS or AES.

The Compact Agreement

SIU has recognized the Illinois regionally accredited community college transferable baccalaureate oriented Associate of Arts or Associate of Science degrees under the Compact Agreement since 1970. SIU will continue to recognize the baccalaureate oriented associate degree (A.A. or A.S. degree) under the Illinois Articulation Initiative. The Associate in Engineering Science (A.E.S.), the Associate in General Studies (A.G.S.), and the Associate in Fine Arts (A.F.A.) are not covered under the Compact Agreement and do not carry the same benefits as the A.A. and A.S. degrees.

Students without an A.A. or A.S. from an Illinois Accredited Community College

Transfer students who have not earned a baccalaureate-oriented Associate of Arts or Associate of Science degree from an accredited Illinois public community college prior to attending SIU, but who have been certified by a participating Illinois Articulation Initiative institution as having completed the Illinois Transferable General Education Core Curriculum (IAI GECC) will be considered as having fulfilled the SIU Core Curriculum requirements required for general graduation.

SIU will waive a fraction of a semester hour of an SIU Core Curriculum course requirement for a satisfactorily completed and approved course from an accredited institution participating in the Illinois Articulation Initiative. Students must complete a minimum of 37 semester (56 quarter) hours to satisfy the SIU Core Curriculum requirements.

Transfer students with an AA or AS from a regionally accredited out-of-state institution or an Illinois institution that does not participate in IAI, who present 37 or more semester hours of general education credit prior to initial enrollment will be evaluated to determine completion of the SIU Core Curriculum model. If the student has completed the SIU model, the student will be considered as having fulfilled the SIU Core Curriculum requirements.

Transfer students who have earned the Associate in Applied Science (AAS) degree may qualify to complete their University Core Curriculum requirements under the Capstone Option. [Information about the Capstone Option and the participating majors is explained here](#).

Evaluation of courses taken at regionally accredited colleges and universities will be completed by Transfer Student Services at the time of the student's admission to the University. Any Illinois Transferable General Education Core (IAI) course that is articulated to a SIU Core Curriculum course will be utilized toward completion of the SIU Core Curriculum. Transcripts submitted for evaluation must be issued within the last thirty days.

The Illinois Articulation Initiative Transferable General Education Core (IAI) is in effect for students who began an associate or baccalaureate degree as first-time freshmen Summer 1998 or thereafter. Students transferring from SIU to another institution may request that SIU audit their record for completion of the Illinois Transferable General Education Core. If this is complete, the student will receive certification of that completion on the transcript. The student must have 37 or more semester hours of general education credits prior to this request. IAI general education core courses are listed under the [Illinois Articulation Initiative section](#).

SIU re-entry students who have not earned an Illinois baccalaureate oriented AA or AS degree, or students concurrently enrolled at another institution while attending SIU, must complete the SIU Core Curriculum or the IAI General Education Core Curriculum requirements. A student must have a minimum of 30 semester hours of transfer credit prior to enrollment at SIU in order to be eligible to complete the IAI GECC in lieu of the SIU UCC requirement subsequent to admission to the University. Concurrently enrolled students should seek advice from the Transfer Student Services on acceptable course equivalents to the SIU Core Curriculum or visit the web site: transfer.siu.edu.

Illinois Articulation Initiative

SIU is a participant in the Illinois Articulation Initiative (IAI), a statewide agreement that allows transfer of the completed Transferable General Education Core Curriculum between participating institutions. Completion of the General Education Core Curriculum at any participating college or university in Illinois assures transferring students that general education requirements for the bachelor's degree have been satisfied. This agreement is in effect for students entering an associate or baccalaureate degree-granting institution as a first-time freshman in Summer 1998 (and thereafter).

Students who have completed the Illinois Transferable General Education Core and have been certified as complete by the sending institution will have completed the University Core Curriculum requirements for general graduation purposes at Southern Illinois University Carbondale. Certification of the Illinois Transferable General Education Core must contain the minimum requirements shown on following chart:

Illinois Transferrable General Education Core Curriculum Minimum Requirements

Area	Number Of Courses	Semester Hours	Special Requirements
Communication	3	9	Two Writing, one oral communication (C or better is required for the writing sequence)
Mathematics	1 or 2	3-6	
Physical & Life Sciences ^{1 2}		7-8	One Life Science and one Physical Science; one must have a lab
Humanities & Fine Arts	3	9	At least one course selected from Humanities and one course from the Fine Arts

Area	Number Of Courses	Semester Hours	Special Requirements
Social & Behavioral Science	3	9	Two Disciplines must be represented: Anthropology, History, Economics, Human Geography, Political Science, Psychology, Sociology, Interdisciplinary Social/ Behavioral Science
Total	12-13	37-41	

¹Students with appropriate preparation may substitute an initial major course designed for science majors.

Transfer courses from 1996 and forward will be audited to determine if they will fulfill the model above.

University Core Curriculum

The University Core Curriculum is a carefully structured and deliberately sequenced program of study required of all SIU Carbondale undergraduate students. The program's objectives are to develop students' abilities to communicate orally and in writing, to think mathematically, and to analyze and conceptualize effectively. The Core is grounded in the traditional arts and sciences, and fosters a life of inquiry, creativity, and civic participation. As a matter of principle, the program limits curricular choice in favor of greater conceptual coherence.

Within the first 56 credit hours, every undergraduate must take 13 credit hours of Foundation Skills in English Composition, Foundations of Inquiry, Communication Studies, and Mathematics. Most undergraduates must also take a Foundations of Inquiry course. To introduce students to the universe of human knowledge, which underlies all undergraduate majors, the Core requires 23 credit hours of Disciplinary Studies in Fine Arts, Human Health, Humanities, Science, and Social Science. Finally, to emphasize the interconnectedness of our lives, culturally and intellectually, students are required to take 3 credit hours of Integrative Studies in Multicultural/Diversity courses.

The University Core Curriculum is administered by a faculty director, assisted by two University-wide committees, to oversee the implementation of curricular policy as set by the Provost and the Faculty Senate. To provide quality control, all Core courses are reviewed and student learning in them assessed at least once every five semesters by the Core Curriculum Executive Council. The Core is also subject to program review on a regular schedule established by the Illinois Board of Higher Education and the Higher Learning Commission of North Central Accreditation Association. Further information about the University Core Curriculum is available from its director and the [program's webpage](#).

- [University Core Curriculum goals](#)
- [University Core Curriculum requirements](#)
- [University Core Curriculum courses](#)
- [Capstone Option](#)
- [Transfer Students](#)
- [Illinois Articulation Initiative](#)

Colleges

Colleges, Academic Services and Programs

GREATNESS HAPPENS HERE

SIU is where brains and heart intersect. Our beautiful campus is home to major opportunities in a number of fields. We welcome students from all walks of life from around the world and pride ourselves on inclusivity.

College of Liberal Arts

Departments: Africana Studies; Anthropology; Art and Design; Communication Studies; Criminology and Criminal Justice; Economics; English; Geography and Environmental Resources; History; Languages, Cultures and International Trade; Linguistics; Music; Philosophy; Political Science; Psychology; Sociology; Theater.

College of Science

Departments: Chemistry and Biochemistry; Computer Science; Geology; Mathematics; Microbiology; Physics; Plant Biology; Zoology

The College of Science offers majors leading to the Bachelor of Arts and/or Bachelor of Science degrees in the following fields of study:

Biological Sciences

Chemistry

Computer Science

Geology

Mathematics

Microbiology

Physics

Physiology

Plant Biology

Zoology

Included in the curriculum of each department are foundation courses that provide an introduction to the subject matter of that discipline while fulfilling the University Core Curriculum requirements of Southern Illinois University Carbondale. These courses enable students to develop an understanding and appreciation of the impact of science on our daily lives. Introductory and advanced courses are provided to prepare students for professional employment or entrance into professional and graduate schools. Graduate training is also provided by each of the science departments leading to the M.S. or Ph.D. degree. Research interests of the faculty are extremely diverse.

Students in the College of Science may prepare for teaching at the secondary level by fulfilling the additional requirements of the College of Education and Human Services.

The Bachelor of Arts or the Bachelor of Science degree is granted to students who fulfill the University requirements for graduation, the College of Science requirements as given below, and the requirements of the departments in which the students declare their majors.

Regularly enrolled students must declare a College of Science major by the beginning of their sophomore year. Transfer students must declare a College of Science major by the beginning of their second semester following transfer. Students planning post-baccalaureate work in a professional field may designate their intention by declaring a preprofessional area as a secondary concentration, e.g., pre-medicine.

Each department has specific requirements for students to major in the selected field of interest. The College of Science has some minimum general requirements listed below.

ACADEMIC REQUIREMENTS

None of these general academic requirements may be satisfied by taking the required courses on a Pass/Fail grading basis.

Biological Sciences. Six semester hours in courses offered by the biological sciences departments in the college, with the proviso that this requirement cannot be satisfied in whole or in part by the University Core Curriculum courses, but may be substituted for the latter in meeting the University Core Curriculum requirements.

Mathematics. The mathematics requirement can be met: (a) by passing Mathematics 108 and 109, or 111 or its equivalent, or Mathematics 141 or 150 or equivalent, or (b) by proficiency credit.

Physical Sciences. Six semester hours in courses offered by the physical science departments of the college, with the proviso that this requirement cannot be satisfied in whole or in part by University Core courses, but may be substituted for the latter in meeting the University Core Curriculum requirements.

Supportive Skills. Two courses, totaling at least six credit hours must be completed as supportive skills. Supportive skills courses are courses in communication or computation skills that have been approved by the major program and must be chosen from the following subject areas: (a) foreign language; (b) English composition or technical writing; (c) statistics; or (d) computer science. Because departments have different supportive skills requirements, students should consult individual program descriptions for approved courses for each major.

PRE-HEALTH PROFESSIONAL PROGRAMS

SIU admits students with majors in pre-chiropractic, pre-dentistry, pre-medicine, pre-occupational therapy, pre-optometry, pre-physician assistant, pre-physical therapy, pre-podiatry, and pre-veterinary. These are not degree programs, but indicate the students' plans upon completion of the baccalaureate degree. Therefore, students are also required to declare a degree-oriented major. They will complete their degree requirements and fulfill additional professional school requirements with the guidance of a Health Care Professions Advisor (located in the College of Science). Students who choose to pursue these careers must be dedicated and have good academic ability in both the sciences and humanities.

International students should be aware that acceptance at American public professional schools is difficult. As a general rule, no financial aid is available for non-citizens. A small number of international students are accepted at private schools, which are costly.

Students pursuing a career in veterinary medicine have the option of registering in the College of Science or the College of Agricultural Sciences. Typically, students are either Zoology (Science) or Animal Science (Agriculture) majors. Pre-veterinary requirements can be met through either college.

SIU Carbondale has a collaborative nursing program with SIUE on the Carbondale campus; students desiring to obtain their Bachelor of Science in nursing must complete one year of pre-nursing (E-track), then apply to the three-year program. All four years are offered in Carbondale; however, students are awarded a nursing degree through SIUE. SIU Carbondale also has a traditional pre-nursing program for students who plan to apply to other schools of nursing besides SIU. Pre-pharmacy students may apply to pharmacy schools at SIUE and other locations after two to three years of rigorous prerequisite course work.

For a listing of SIU Carbondale Pre-Health program curricula requirements, see the corresponding link to the specific programs at the Health Professions Information Office page at: http://www.science.siu.edu/advisement/health_advisement/index.html.

The College of Science Repeat Policy limits the number of times that an undergraduate student may repeat a MAJOR course for the purpose of raising a grade. Students earning less than a "C" in a major course, may repeat said course one time only. As there may be reasonable exceptions to the policy, students who wish to request Dean's permission to repeat beyond one time may do so by filling out a College of Science Repeat Petition obtained from the College of Science Advisement Office.

College of Agricultural Sciences

The College of Agricultural Sciences offers the following majors with specializations leading to the Bachelor of Science degree.

College of Applied Sciences and Arts

Career and technically oriented academic programs in the College of Applied Sciences and Arts can lead to one of fourteen Bachelor of Science degrees and three Associate in Applied Science degrees. These programs provide career paths for first-time students or transfer students from SIU Carbondale or other institutions.

College of Business

The College of Business aims to prepare students to perform successfully in business and other organizations such as government and other not-for-profit organizations functioning within a changing social, economic, and political environment. Study provides the student with fundamental principles

and practices of organizational behavior and allows the mastering of knowledge and skills for effective management. The curriculum provides a broad base for understanding business while simultaneously allowing in-depth study within an area of concentration and exposure to current information technology. Students find business, governmental units, and other public institutions desire the professional education they receive in the college. The advanced curriculum and related programs provide students not only with a meaningful education but also with a means of relating that education to organizations and commerce.

College of Education and Human Services

Departments: Curriculum and Instruction; Educational Administration and Higher Education; Counseling, Quantitative Methods, and Special Education; Health Education and Recreation; Kinesiology; Rehabilitation Institute; School of Social Work; Workforce Education and Development.

College of Engineering

Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience and practice is applied with judgment to develop ways to utilize economically the materials and forces of nature for the benefit of people.

Vision. The College of Engineering at Southern Illinois University Carbondale will excel in engineering and technology education and research through the quality of its faculty, graduates, students, staff, facilities, and programs. The College of Engineering at Southern Illinois University Carbondale will be the engineering and technology programs of choice where parents want to send their children, where students want to learn, where employers seek engineers and technologists, where industry and government find technological innovations, and where underrepresented and underserved populations are encouraged and supported to obtain a quality education.

The College will respond to the needs of its constituencies. Our constituencies include: students, parents, employers, alumni, faculty, public communities, and the sponsors of our funded research. We will listen to all of our constituencies and will be responsive to their needs consistent with the University mission. The College administration will regularly and constantly seek the input of the faculty to determine the direction of the College.

Mission. To provide world-class programs in engineering and technology education, research, and service so as to enhance the economic and social well being of the citizens of Illinois, the nation, and the world.

In order to accomplish our mission we will:

- Provide a world-class education for our students by continually assessing and improving our educational programs
- Support and expand the undergraduate technology program to military bases in the nation and industrial sites in Illinois
- Perform state-of-the-art research that will improve the nation's strategic engineering and environmental technologies
- Build productive and mutually beneficial partnerships with our external constituencies
- Continuously improve the critical student and faculty support processes that are key to the College's mission
- Develop partnerships with industries to improve the economy of Southern Illinois

The College's strategic and educational objective, consistent with the vision and mission statements, are to prepare students

- To communicate clearly and concisely in written and oral formats with audiences ranging from technical to lay persons
- To be effective engineering and technology practitioners, with the ability to employ modern techniques, skills, and engineering tools, emphasizing computer capability and the access and use of information resources
- To be cognizant of current societal issues as well as technology issues so that they can function as effective partners with citizen groups; industries; local, state, federal, and international governing bodies; and other interest groups, in formulating policies and plans to address the contemporary and emerging problems

- To translate scientific, mathematical, and engineering theories into practical solutions of engineering problems through classroom presentations, laboratory and other experimentation, data analysis, employment opportunities such as those offered by cooperative education, internships, association with research projects, and other out of class experiences
- To function as interdisciplinary team members and/or team leaders in addressing multi-faceted engineering and social problems having ethical, public health, environmental, political, economic, international and/or other dimensions
- To recognize engineering problems, have the skills to develop strategies for solving such problems, be competent to carry out relevant design processes, recognize the need for considering alternative approaches to problem-solving, and to understand the realities of what society will and will not accept as feasible solutions
- To be responsible practitioners, having full understanding of the ethical and professional dimensions of good engineering and technology practice and the need for life-long learning

The college has four Engineering Departments and one Technology Department. The four Engineering Departments are:

1. Civil and Environmental Engineering
2. Electrical and Computer Engineering
3. Mechanical Engineering and Energy Processes
4. Mining and Mineral Resources Engineering

These departments offer undergraduate and graduate degree programs ranging from Bachelor of Science to Doctor of Philosophy. The undergraduate engineering programs in civil engineering, computer engineering, electrical engineering, mechanical engineering, and mining engineering are accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Undergraduates who major in civil engineering have the option for a specialization in environmental engineering. Students can also earn a dual degree in electrical and computer engineering.

Detailed descriptions of these programs, including educational objectives, guides are presented within the [program majors](#).

The Department of Technology offers the following undergraduate programs leading to the Bachelor of Science degree:

- Electrical Engineering Technology
- Industrial Management and Applied Engineering - Quality Management Specialization

Detailed descriptions of these programs including, educational objectives, curricula, areas of specialization and suggested curricular guides are presented within the [program majors](#).

The electrical engineering technology program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org. The industrial management and applied engineering program is accredited by the Association of Technology, Management, and Applied Engineering (ATMAE).

Civil and Environmental Engineering. Civil and Environmental Engineers are responsible for the design, construction, maintenance, and management of the infrastructure consisting of highways, bridges, dams, water and wastewater systems, power generating stations, pollution control systems, airports, skyscrapers, and other industrial and commercial buildings. Design and management decisions consider a wide range of factors, including earthquakes, hurricanes, progressive collapse and environmental impact.

The civil engineering program leading to the Bachelor of Science degree in Civil Engineering is designed to provide the student with the broad educational background essential to be a successful entry level Civil Engineer in practice and to meet the technological challenges of the 21st century. The program also provides additional coursework to the student who prefers to obtain a Civil Engineering degree with emphasis on Environmental Engineering. The technical electives in the senior year permit greater breadth and additional depth in the areas of structural engineering, geotechnical engineering, hydraulic engineering, and environmental engineering.

The graduates from this program are eligible to become registered professional engineers (PE) after satisfying the state registration board's requirements. In addition, the program offers the coursework required for admission to the Structural Engineer License (SE) examination.

Electrical and Computer Engineering. The Department of Electrical and Computer Engineering offers Bachelor of Science degrees in Electrical Engineering and Computer Engineering. The Department offers the option for a dual degree in Electrical and in Computer Engineering.

The electrical engineering curriculum provides students with the opportunity to choose among advanced courses in the theory and applications of circuits, systems, control, signal processing, communications, digital systems, power systems, electronics, gaseous electronics, optics, electrooptics, electromagnetics, antennas and propagation. The computer engineering curriculum provides emphasis on problem solving and design experiences through understanding of the fundamentals of both the hardware and software aspects of computer engineering.

Employment opportunities for electrical and computer engineers exist within a wide range of organizations, such as computer, semiconductor, aviation, electronics, microelectronics, broadcasting, telecommunications, defense, automotive, manufacturing and electric power companies, state and federal agencies and laboratories. Employment opportunities cover the spectrum of engineering activities, ranging from research and development, to systems analysis, automation, manufacturing, customer service and support, marketing and sales.

Mechanical Engineering. Mechanical engineering is one of the most broadly based of the traditional engineering disciplines. Mechanical engineers design and develop a wide variety of systems for conversion, transmission, and utilization of energy; for material processing and handling and packaging; for transportation; for environmental control; and for many other purposes for the benefit of humanity. Therefore, the curriculum contains a broad foundation in mathematics and the basics of engineering sciences, followed by more concentrated study in energy and machine systems. Mechanical engineers may be found in a variety of assignments including planning and design, research and development, supervision of installation and operation of complex systems, and management.

Mining and Mineral Resources Engineering. Mining engineers engage in planning, design, development, and management of surface and underground mining operations for extraction of the earth's mineral deposits. The mining engineering program prepares graduates to meet the challenges of the mining industry with emphasis on the coal and aggregate industries. Coursework in the program includes such areas as surface and underground mining systems, mine ventilation, ground control and rock mechanics, mineral and coal processing, material handling systems, mineral economics, mine health and safety engineering, operations research, and computer-aided mine design.

After completing the program, the graduate may work in an engineering or management position for mining industries, equipment manufacturers, research organizations, or government agencies. The coursework also provides strong preparation for further study at the graduate level.

Electrical Engineering Technology. Electrical engineering technology is that part of the technological field in which engineering knowledge and scientific methods are combined with hands-on technical skills to support engineering activities. It lies in the occupational spectrum between that of the technician and the engineer with specific responsibilities depending upon the nature of the training and requirements of the job but lying more closely to engineering. Graduates are prepared to deal with technical and production problems, and to apply their knowledge to such activities as development, design, construction, maintenance, and operational problems.

Industrial Management and Applied Engineering. Industrial management and applied engineering is a management-oriented technical profession that is built upon a sound knowledge and understanding of materials, processes, technical management, and human relations; and a proficiency level in the physical sciences, mathematics, and technical skills to permit the graduate to capably resolve technical-managerial and production problems. Graduates of this program are prepared for positions in processes, safety, quality control, supervision, robotics, methods analysis, and computer-aided manufacturing.

Freshman Seminar. Entering freshman enrolled in the College of Engineering are required to attend our Freshman seminar. This seminar consists of six one-hour lectures offered in the fall semester. The first lecture introduces key college personnel and

our support services, while also providing an overview of the engineering profession and our outstanding Registered Student Organizations (RSOs). The five remaining lectures focus on our engineering and engineering technology majors. These presentations provide guidance on careers and the curriculum offered in each program of study.

Admittance to the College

SIUC engineering students are an exceptional and committed group. Success in the engineering programs demands academic dedication, personal discipline, and sufficient preparation at the high-school

level. Admission to the College of Engineering is selective and competitive and it is based on an individual review of each application. Emphasis is placed on the ACT/SAT composite and math sub-scores, science and math course work, and math placement. All engineering students placing below Calculus will be required to enroll in ENGR 111. Students can apply to a specific departmental major or as an undeclared engineering major. For more information please contact the College of Engineering at (618) 453-4321.

Admittance to the Pre-Engineering Program

The pre-engineering program is designed for students who apply to our college with the potential to be successful, but who do not meet admission requirements for the College of Engineering. The pre-engineering advisors will develop an individualized program of study aligned with the curricular guides of programs offered in the College of Engineering with the goal of preparing these students to enter a major in engineering. All students must achieve satisfactory math placement, as determined by the college of engineering, before being formally admitted to one of the engineering majors, listed below:

- Civil Engineering
- Civil Engineering with a Specialization in Environmental Engineering
- Computer Engineering
- Electrical Engineering
- Electrical Engineering Technology
- Industrial Management and Applied Engineering
- Mechanical Engineering
- Mining Engineering

The curriculum guides for these degree programs can be found in the program sections of the catalog. The engineering advisors will consider math placement when developing the individualized program of study. In addition, pre-engineering students are required to enroll in ENGR 111.

As with students admitted to the College of Engineering, pre-engineering students will be required to live in the Engineering Living Learning-Community. In addition, pre-engineering students will be invited to participate in the many different learning and social activities of the College of Engineering. The maximum time limit for the pre-engineering program is 45 credit hours at SIUC.

Course Sequence

It is important that required courses in the program be taken in the proper sequence. Sequence guidelines are available from the college advisement office and the departmental offices. Courses on the 300-and 400-levels are reserved for juniors and seniors.

Transfer Students

Students enrolled in community colleges who plan to transfer to the College of Engineering at Southern Illinois University Carbondale should take courses that provide backgrounds in mathematics, physical sciences, social sciences, and humanities. Students may transfer at any time, but there are advantages in having completed a baccalaureate-oriented associate-degree program. Community college students may contact the Engineering Advisement Office for course recommendations applicable to majors in the College of Engineering.

All transfer credit from an accredited institution that is deemed acceptable at the University, both two-year and four-year, will be used in fulfillment of program requirements. Equivalencies for courses will be determined by the departmental chair, advisement office, or office of the dean, College of Engineering.

Students who are attending a public Illinois community college and contemplating application to the College of Engineering should obtain program information that has been prepared for their particular community college.

All degrees offered by the College of Engineering participate in the [SIU Capstone Option](#). The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. Students interested in the Capstone Option should contact the College of Engineering Advisement Office to develop a personal coursework pathway to degree completion.

Location Administrative offices of the college are located in the Engineering Building, 1230 Lincoln Drive.

College of Mass Communication and Media Arts

Departments: Cinema and Photography; Radio, Television, & Digital Media

Schools: Journalism

The College of Mass Communication and Media Arts (MCMA) offers the Bachelor of Arts degree in Cinema and Photography and Radio, Television, & Digital Media. The Bachelor of Science degree is awarded in the School of Journalism. The College also offers four graduate programs, for information on these please see the SIU Graduate Catalog.

Admission to the University is handled through the Office of Undergraduate Admissions, but those students who desire more specific information about a major should make an appointment with the academic advisor of that department or school.

Academic advisors in the College advise prospective students about major requirements, curriculum, extracurricular activities, careers, and opportunities. Transfer students may also discuss transfer credit and placement in courses at Southern Illinois University Carbondale.

Faculty of the college engage in research and creative activities concerning mass communication and media arts. They also provide consulting service and other community services to schools, newspapers, radio and television stations, museums, businesses, and government. They hold professional memberships and serve as officers in various local, state, national, and international organizations in mass communication and media arts. The College plans a number of special events each year, including lectures by noted artists and media professionals, photography exhibits, and film showings.

Opportunities for practical learning in real world settings include student employment at the Daily Egyptian, a student-run newspaper with a circulation of 27,000, a PBS television station, an NPR radio station, the Saluki Advertising Agency, and the Big Muddy Film Festival, all housed in the College. The River Region Evening Edition, a live newscast aired on PBS, is produced entirely by students under the supervision of a faculty member. Students can participate in internships in media centers across the country, such as Hollywood, Chicago, Nashville, as well as locally.

Administrative offices of the College are located in the Communications Building, which includes the broadcasting facilities, film, video, and multimedia production facilities, the New Media Center, the Daily Egyptian, and the River Region Evening Edition.

School of Medicine

Southern Illinois University School of Medicine was established in 1970 after the Illinois General Assembly passed a bill calling for a second state medical school to be established in downstate Illinois. The School graduated an advanced standing class in 1975 and its charter class of all Illinois students in 1976. Currently, 72 students are admitted each year. Today, the School encompasses a complete sequence of medical education beginning with the M.D. degree and progressing through residency training and on to continuing medical education for practicing physicians.

The medical education curriculum has brought the school national attention. Since students are not evaluated in competition with their peers, they are stimulated to cooperate with one another, a situation that more closely resembles what takes place in the actual practice of medicine. Problem-based learning concepts, including active learning situations with virtual and simulated patients, are used to help students work toward clinical competency throughout the four-year curriculum. The first year of the four-year M.D. degree is taught on the Carbondale campus where students concentrate on the basic sciences. The remaining three years are taught in Springfield where students study clinical medicine along with medical humanities and various electives.

The instructional program in Carbondale is based in Lindegren Hall and Memorial Hospital. In Springfield, it is based in the Medical Instructional Facility, the SIU Clinics, Memorial Medical Center, St. John's Hospital and other locations.

The school offers an M.D.-J.D. dual degree program in conjunction with the SIU School of Law and an M.D.-MPH degree with the SIU College of Education and Human Services. The school also oversees a Physician Assistant program in Carbondale.

The School's Medical/Dental Education Preparatory Program (MEDPREP) in Carbondale is designed to assist underrepresented populations and others with educationally disadvantaged backgrounds to prepare for success in medical and dental schools.

The School's residency programs include dermatology, emergency medicine, family medicine, internal medicine, medicine/psychiatry, neurology, neurosurgery, obstetrics and gynecology, pediatrics, psychiatry, radiology and six surgical specialties. There are twelve fellowships for advanced clinical work.

The School's continuing medical education program provides an extensive schedule of accredited conferences and symposia for physicians and other health-care professionals in central and southern Illinois. Programs are held in Springfield, Carbondale and throughout the School's service area.

The School also offers graduate programs for master's and doctoral degrees in physiology, pharmacology and molecular biology, microbiology and biochemistry, and a teaching certificate of anatomy. The faculty in Carbondale's and Springfield's basic science departments divide their time between teaching responsibilities and research. Both clinical investigators and basic scientists collaborate on a wide-range of medical and scientific projects; they work in the various basic science laboratories on both campuses and in the clinical facilities located in the affiliated hospitals in Springfield.

Interfaced with its various educational and research programs is the provision of patient care through the various clinical departments and specialized clinics of the School and the practice of its physician faculty.

Preference for admission is given to applicants from central and southern Illinois and other underserved (inner-city, rural) portions of the state. Inquiries regarding admissions and requests for a catalog from the School of Medicine should be addressed to the Director of Admissions, Southern Illinois University School of Medicine, P.O. Box 19624, Springfield, Illinois 62794-9624. More information can be found at www.siumed.edu.

School of Law

The Southern Illinois University School of Law has established a positive, individualized learning environment that allows students to develop the skills necessary to compete in today's legal market. The low student/faculty ratio (13- to- 1) illustrates the School's commitment to personal education. Students receive the very best in instruction from faculty drawn from distinguished practice and academic settings. The curriculum balances traditional legal education with practical skills training to produce an attorney who understands the law and how to apply it in real-world situations.

The Juris Doctor (JD) degree program is a three-year, full-time day program. The school also offers a Two-Year Honors scheduling option for eligible students. Students must indicate their interest in this option at the time of their application to law school.

In the first year, students take fundamental law courses as well as Lawyering Skills classes that combine legal research and writing, interviewing, counseling, negotiation and oral advocacy. All first-year students take a Professionalism and the Law class. The School has been recognized by the Illinois Supreme Court and the American Bar Association for its leadership in the development of professionalism programs. SIU is one of the few law schools in the country that guarantee its JD students an opportunity to participate in a legal clinic or field placement experience. Students have a variety of experiential learning and extracurricular opportunities including legal clinics, in which they assist actual clients under the supervision of licensed attorneys; externships; moot court; pro bono activities; study abroad; writing and editing for the Southern Illinois University Law Journal or the Journal of Legal Medicine; and more than twenty student organizations.

Professionals who have expertise in the intersection of information systems and the law staff the Law Library and teach in the Lawyering Skills program.

The School offers specializations in Intellectual Property, Health Law and Policy, International and Comparative Law, Business and Transactional Law, Litigation and Dispute Resolution, and Public Interest Law. Students who complete the requirements for these specializations earn a transcript notation and certificate that will allow them to demonstrate to potential employers their genuine interest and growing expertise in the field.

The School also offers interdisciplinary opportunities including seven joint degree programs in Accountancy (MACC), Social Work (MSW), Public Administration (MPA), Educational Administration (M.S.Ed), Business Administration (MBA), Electrical Computer Engineering (ECE), Political Science (Ph.D.) and Medicine (MD). The School's joint JD/MD program, offered in conjunction with the SIU School of Medicine, is one of only a few concurrent law/medicine programs available in the country.

The relationship between the schools of law and medicine offers law students unique opportunities for collaborative learning through the Center for Health Law and Policy.

The School is an accredited provider of continuing legal education programming for Illinois attorneys. Interested students can contact the Office of Admissions by email at lawadmit@siu.edu, by phone at 800/739-9187, or by mail at SIU School of Law, 1150 Douglas Drive, Carbondale, Illinois 62901. Students are also encouraged to visit the School of Law's website at law.siu.edu.

With advance notice, students and parents can request a tour, a meeting with law school staff, and an opportunity to sit in on a current law school class (when class is in session).

The School of Law is fully accredited by the American Bar Association and is a member of the Association of American Law Schools.

Programs

Accounting

Accountancy (School)

The School of Accountancy is dedicated to the discovery, the interpretation and the dissemination of knowledge to students, the profession and colleagues.

Accounting is the process of identifying, measuring, and communicating economic information to permit informed judgments and decisions by users of the information. Such information is required and used by parties, both internal and external to a business, a not-for-profit organization, and other entities.

The curriculum is designed with sufficient flexibility to prepare students for the many career options available to accounting graduates. Among the principal career options are public accounting (Certified Public Accountants), corporate accounting, not for profit accounting and other business consulting or finance flavored careers. Illinois and most other states require 150 hours of college credit to sit for the CPA exam.

The curriculum consists of three segments, each designed for a specific purpose. The first segment, the University Core Curriculum, is designed to provide a solid grounding in the liberal arts and sciences, and promote analytic and imaginative abilities that are essential for a life of inquiry, creativity and informed civic participation. The second segment, the Professional Business Core, is required of all business majors. It provides a broad base of knowledge in accounting, finance, management, marketing, business law, technology, economics, communications and math required for the professional study of accounting. The third segment, the Accounting Core consists of essential accounting material all accounting professionals should master. Students preparing for a career in accounting will have access to separate courses in advanced accounting, accounting for public organizations, auditing, advanced cost, advanced taxation, and enterprise networks and communications. Those students preparing for a career in public accounting should also pursue a fifth year of study and the Master of Accountancy degree. Specialized courses of study in taxation and audit/systems are available.

A major in Accounting requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for the Accounting major* (as described below), and students must earn a minimum 2.0 grade point average for those major courses. The School of Accountancy enforces all prerequisites for accounting prefix courses which in some cases include a grade of C or higher. All 300- and 400-level accounting courses may be repeated for a grade only once. For Accounting majors and minors, Accounting courses completed more than seven calendar years prior to the current term must be repeated (excluding ACCT 208).

The Capstone Option for Transfer Students

The Capstone Option is available to students who have earned an Associate in Applied Science (AAS) degree or have the equivalent and who have a cumulative 2.0/4.0 GPA on all accredited coursework prior to the completion of the AAS, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. See the Capstone Option section for more information on this option. Students who apply for the Capstone Option will work with the College of Business Advisement Office for approval of the Capstone Option and will complete a personal contract for a degree completion plan.

Differential Tuition

The College of Business assesses College of Business majors a differential tuition for declared College of Business majors. The College of Business has a "minor program fee" for other than College of Business majors that is equal to 15% of 15 credit hours of applicable tuition for declared College of Business minors.

Program Objectives for Students

Students graduating with an undergraduate degree in accounting should possess a basic understanding of accounting concepts (financial, taxation, auditing, managerial and accounting information systems) such that they would be able to prepare, analyze and communicate accounting information. Students graduating with an undergraduate degree should also be able to communicate effectively in a business setting both orally and in the written form. Graduates should be able to apply their accounting knowledge to unstructured problems, to work effectively in a team environment and to work effectively in a computer-based environment.

Bachelor of Science Degree in Accounting, College of Business

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Professional Business Core	47
Requirements for Major in Accounting. Minimum grade of C required for all classes in major area (a grade of C- is not sufficient).	30
Accounting Core	27
ACCT 321, ACCT 322, ACCT 421	9
ACCT 331, ACCT 431	6
ACCT 341, ACCT 441	6
ACCT 360, ACCT 460	6
Accounting Electives - Choose one of the following three-hour courses: ACCT 411, ACCT 465, ACCT 468, ACCT 471 or ACCT 495	3
Electives ¹	4
Total	120

¹ 120 semester hours are required for graduation. Any additional hours of college level credit can be used to equal minimum 120 semester hours required for degree.

Online Accounting Degree Completion

The School of Accountancy offers an online delivery option for students residing outside the Carbondale community or who have work and/or family commitments that make traditional campus attendance impractical. The same curriculum requirements apply to both residential and online students. Students are generally restricted to taking courses within the delivery option they select at the outset of the program, but may switch to the other delivery option one time before graduation.

Accounting Minor

A minor in Accounting consists of a minimum of 15 semester hours, including ACCT 220, ACCT 230 and nine credit hours in Accounting at the 300-level or above. All prerequisites for these classes must also be satisfied. At least nine of the 15 semester hours must be taken at Southern Illinois University Carbondale. An advisor within the College of Business must be consulted before selecting this field as a minor.

A minor from the College of Business requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for their minor, and students must earn a minimum 2.0 grade point average for those minor courses.

Undergraduate Certificate in Accounting

The Undergraduate Certificate in Accounting is a 30-credit certificate program for individuals who want intensive study in accounting without fulfilling all of the requirements for a bachelor's degree. The program is ideal for individuals who already have a bachelor's degree in a non-accounting business field but need 30 credits of accounting coursework to take the CPA exam; individuals desiring entry-level accounting positions that do not require a bachelor's degree; and students who are pursuing degrees at other institutions but spend a year at Southern Illinois University under a study abroad or other exchange program. The certificate requires students to complete a minimum of 30 semester hours of credit at Southern Illinois University, with at least 21 of the 30 credits in accounting or other business courses approved by the department as relevant to the study of accounting. (Candidates for the CPA exam must have a minimum of 30 credits in accounting courses.) The certificate is available to both residential and on-line students.

Accounting Courses

ACCT208 - Business Data Analysis 208-3 Business Data Analysis. (Same as FIN 208 and MGMT 208) [IAI Course: BUS 901] Uses of data in policy formulation are discussed. Emphasis is placed on the conversion of raw information into statistics, which are useful to the decision-maker. Problems stress solution to questions typically raised in businesses. Prerequisite: MATH 139.

ACCT210 - Acct Principles & Control 210-3 Accounting Principles and Control. Prevalent accounting principles and practices employed in business organizations. Accumulation of data and usefulness of reports are considered. Tax implications of business studied. Not open to students with a major in the College of Business. No credit given for ACCT 210 if credit is claimed for ACCT 220.

ACCT220 - Accounting I-Financial 220-3 Accounting I-Financial. [IAI course: BUS 903] This course covers the basic concepts, principles and techniques used to generate accounting data and financial statements and to interpret and use the financial data to enhance decision making. Restricted to sophomore standing.

ACCT230 - Accounting II-Managerial 230-3 Accounting II-Managerial. [IAI Course: BUS 904] The use of accounting information for managerial planning, control and decision making through budgeting, cost and variance analyses, and responsibility accounting. Prerequisite: ACCT 220. Restricted to sophomore standing. Accounting majors and minors must pass ACCT 220 with a grade of C or better.

ACCT240 - Accounting Princs & Control II 240-3 Accounting Principles and Control II. Prevalent accounting principles and practices used in planning, control and decision making in business organizations. How to use data to best use organizational data to understand the cost and managerial aspects of an organization. Tax implications of managerial decisions will be studied. Not open to students with a major in the College of Business. No credit is given for ACCT 240 if credit is claimed for ACCT 230.

ACCT321 - Intermediate Accounting I 321-3 Intermediate Accounting I. Current accounting principles and procedures relating to elements of financial reporting. Particular emphasis on current and fixed asset valuation. Prerequisite: MATH 140; ACCT 220 and ACCT 230 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher.

ACCT322 - Intermediate Accounting II 322-3 Intermediate Accounting II. Continuation of the study of accounting principles and procedures with emphasis on liabilities, corporate capital, and income determination. Preparation and use of special statements; analysis and interpretation of statements. Prerequisite: ACCT 321 with grade of C or better and MATH 140. Restrictions: College of Business majors or minors, junior standing or higher.

ACCT331 - Cost Accounting 331-3 Cost Accounting. Interpretation and managerial implications of material, labor, and overhead for job order, process and standard cost systems, cost-volume-profit relationships, direct costing, and budgeting. Accounting for complex process production flows, joint and by-products, spoilage, and scrap. Responsibility accounting and reporting. Prerequisite: ACCT 220 & ACCT 230 with C or better; ACCT/FIN/MGMT 208; MATH 139 and MATH 140. Restrictions: College of Business majors or minors, junior standing or higher.

ACCT341 - Introduction to Taxation 341-3 Introduction to Taxation. Background, principles, and procedures for the determination of taxable income as a basis for federal income tax. Particular attention is given to those aspects, which are at variance with usual accounting treatment in the determination of net income. Includes practice in the methodology of tax solutions. Prerequisite: ACCT 220 and ACCT 230 with grades of C or better. Restrictions: Accounting majors or minors, junior standing or higher.

ACCT360 - Acct Systems Operations 360-3 Accounting Systems Operations. (Same as MGMT 360) Accounting information systems analysis and design. Focusing on internal controls, data modeling, databases, documentation tools and information retrieval to improve business decisions. Prerequisite: C or better in MGMT 345. Restrictions: Accounting majors or minors, junior standing or higher, or consent of the school.

ACCT411 - Enterprise Ntwrks & Commun 411-3 Enterprise Networks and Communication. (Same as MGMT 411) Application of data communications and network technologies for improving business. Coverage includes, but is not limited to: introduction to the principles of data transmission technology, various communication architectures and protocols, basic network design principles, internet and intranet technologies, data security issues and elements of network management. Prerequisite: C or better in MGMT 345.

ACCT414 - Business Ethics 414-3 Business Ethics. Examines the philosophical, sociological and legal dimensions of contemporary ethical issues facing the business world today. Stress is on stakeholder analysis and appropriate policy decisions for multinational corporations. Course content centers on actual business cases and hypothetical ethical dilemmas.

ACCT421 - Advanced Accounting 421-3 Advanced Accounting. Accounting principles and procedures relating to specialized topics in financial accounting and business combinations, resulting in consolidated financial statements, and financial accounting for partnerships. Prerequisite: a grade of C or better in ACCT 322. Restrictions: Accounting majors or minors, junior standing or higher.

ACCT431 - Advanced Cost Accounting 431-3 Advanced Cost Accounting. Managerial decision making; profit planning and control through relevant costing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budgeting, inventory models, probabilities, statistical methods, and operations research. Prerequisite: ACCT 331 with grade of C or better. Restrictions: Accounting majors or minors, junior standing or higher.

ACCT441 - Advanced Tax 441-3 Advanced Tax. Study of income tax problems which arise from sole proprietorship, partnership, limited liability company, corporation, estate, and trust. Student does research in source materials in arriving at solutions of complicated problems. Prerequisite: ACCT 341 with grade of C or better. Restrictions: Accounting majors or minors; junior standing or higher.

ACCT460 - Auditing 460-3 Auditing. Provides an overview of processes for planning and executing a risk-based audit; explains the procedures auditors use to evaluate internal controls; describes the tests auditors conduct to substantiate financial statement accounts. Prerequisite: a grade of C or better in ACCT 322. Restrictions: Accounting majors, minors, junior standing.

ACCT465 - Internal Auditing 465-3 Internal Auditing. The course covers internal audit from a broad perspective to include information technology, business processes, and accounting systems. Topics include internal auditing standards, risk assessment, governance, ethics, audit technique, and emerging

issues. It covers the design of business processes and the implementation of key control concepts and will use a case study approach that addresses tactical, strategic, systems, and operational areas. Restrictions: Accounting majors or minors.

ACCT468 - Forensic Accounting 468-3 Forensic Accounting. Coverage of forensic accounting processes and tools used in the detection and prevention of fraud against the company. Topics include skimming, cash larceny, check tampering, billing schemes and others. The course will include the use of computer aids in forensic investigation. Restrictions: Accounting majors and minors.

ACCT471 - Govt & Non Profit Accounting 471-3 Governmental and Not for Profit Accounting. Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations, such as governmental units, institutions, and charitable organizations. Also includes the study of governmental auditing standards. Not for graduate credit. Prerequisite: ACCT 321 with a grade of C or better. Restrictions: Accounting majors or minors.

ACCT475 - Accounting Capstone 475-3 Accounting Capstone. Capstone course covering financial accounting and reporting, IFRS, government accounting, not-for-profit accounting, auditing and attestation, business law, taxation, and business environment and concepts. Emphasis is on reinforcing the knowledge and critical thinking skills necessary for problem-solving and communication in the accounting profession. Limited to students who are eligible to sit for the CPA Exam. Special approval required by the Director of the Master's in Accounting program.

ACCT491 - Independent Study in Acct 491-1 to 6 Independent Study in Accountancy. Independent study of specialized aspects of accountancy not available through regularly scheduled courses. Not for graduate credit. Prerequisite: a grade of C or better in each of ACCT 322, ACCT 331, and ACCT 341. Restrictions: Accounting majors or minors.

ACCT495 - Internship 495-3 Internship. Supervised work experience in professional accounting. Mandatory Pass/Fail only. Not for graduate credit. Course may be repeated in a subsequent semester, but only three semester hours may be applied toward the Accounting major and to the requirements to qualify for the C.P.A. examination. Additional credit hours may only satisfy the 300-400 level College of Business prefix elective or general elective requirements. Restrictions: Accounting majors or minors, outstanding record in accounting. Special approval needed from the department.

ACCT512A - Seminar: Theor Frameworks 512A-3 to 15 (3 per topic) Accounting Research Methods Seminar-Theoretical Frameworks. Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once.

ACCT512B - Seminar: Research Design 512B-3 to 15 (3 per topic) Accounting Research Methods Seminar-Research Design. Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once.

ACCT512C - Seminar: Interpreting Data 512C-3 to 15 (3 per topic) Accounting Research Methods Seminar-Interpreting Data. Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once.

ACCT512D - Seminar: Alt Research Methods 512D-3 to 15 (3 per topic) Accounting Research Methods Seminar-Alternative Research Methods. Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once.

ACCT512E - Seminar: Special Topics 512E-3 to 15 (3 per topic) Accounting Research Methods Seminar-Special Topics. Describes and explains methods for examining research questions about professional judgment in accounting. May be repeated for credit but sections (a) through (d) can be taken only once.

ACCT514 - Ethics of Business 514-3 Ethics of Business. (Same as BA 514) Philosophical implications of contemporary issues in business ethics. Restricted to enrollment in M. Acc. or consent of department.

ACCT521 - Emerging Issues in Acct 521-3 Emerging Issues in Accountancy. Identifies developing areas in financial accounting and forces students to research the issues, to think critically, evaluate alternatives and communicate conclusions in oral and written form. International accounting, not-for-profit, standard setting and regulation, and other developing issues are addressed. The Journal of Accountancy, other professional journals, and guest speakers. Prerequisite: ACCT 321, ACCT 322.

ACCT532 - Adv Management Accounting 532-3 Advanced Management Accounting. Management planning and control decisions and design and evaluation of management accounting systems requiring formal models and application of vigorous analytic reasoning. Integration and synthesis of techniques such as regression analysis, linear programming, decision theory and behavioral science for important decisions of the form. Information economics. Contemporary research directories. Restricted to enrollment in M.Acc. or M.B.A. program.

ACCT541 - Tax Concepts 541-3 Tax Concepts. Provides the student with an understanding of the nature of the federal tax law and an appreciation of the law's impact upon business decisions both for individuals and companies. Prerequisite: ACCT 441 with C or better.

ACCT542 - Tax Research & Procedure 542-3 Tax Research and Procedure. Provides the student with a working knowledge of the tax practitioner's methodology applied to the solution of both routine and complex tax problems. Prerequisite: ACCT 441 with C or better.

ACCT543 - Corporate Taxation 543-3 Corporate Taxation. (Same as LAW 514) Provides students with in-depth exposure to federal income taxation of corporations and shareholders. Areas explored are corporate formations, distributions, redemptions, liquidations, corporate income tax, accumulated earnings tax, personal holding company tax, and affiliated corporations. Prerequisite: ACCT 441 with C or better.

ACCT544 - Partnership Taxation 544-3 Partnership Taxation. (Same as LAW 515) Provides students with in-depth exposure to federal income taxation of partnerships, partners and related LLCs and owners. Areas explored are the definition of a partnership, acquisition of an interest, basis of interest, tax accounting for partnership, subchapter S, or LLC operation, distributions, termination, sale or exchange of interest, collapsible partnerships, death or retirement and tax shelters. Prerequisite: ACCT 441 with C or better.

ACCT545 - State and Local Taxation 545-3 State and Local Taxation. This course will focus on the legislative and judicial evolution of the present tax systems. Basic concepts of state and local taxation, such as jurisdiction, commerce clause restrictions, uniformity, apportionment and taxation of e-commerce, will be examined. One of the primary objectives of this class is to ensure that students are familiar with the myriad of U.S. Supreme Court decisions delineating the taxing authority of state and local government entities in relation to the commerce, due process, equal protection and supremacy clauses of the U.S. Constitution. Students will also learn to interpret and analyze complex court decisions. Restricted to enrollment in the M.Acc. or M.B.A. program.

ACCT546 - Estate & Gift Taxation 546-3 Estate and Gift Taxation. Provide basic principles of federal estate and gift taxation. Prerequisite: ACCT 441 with C or better.

ACCT547 - Tax Accounting 547-3 Tax Accounting Principles. Provides linkage of accounting skills with tax knowledge through identification of significant differences between tax and financial accounting and selection of tax accounting principles having a significant impact on cash flows. Tax accounting problems for industrial, wholesale and retail companies. Prerequisite: ACCT 441 with C or better.

ACCT548 - International Taxation 548-3 International and Interstate Taxation. Examination of tax issues when taxable events or transactions cross international or state borders. Use of transfer pricing for international taxation purposes. Specific international taxation problems of foreign persons, U.S. citizens living abroad, U.S. shareholders of foreign corporations and problems related to multinational corporations. Also will examine issues of nexus and other principles guiding state taxation of persons and businesses involved in interstate commerce. Prerequisite: ACCT 441 with C or better.

ACCT560 - IT Risk and Controls 560-3 Information Technology Risk and Controls. Explains how organizations govern their investment in IT through strategic alignment, risk assessment, and performance measurement. Describes processes for evaluating and monitoring the effectiveness

of IT general controls related to processing operations, system security, and change management. Prerequisite: ACCT 360. Restriction: enrollment as a graduate student.

ACCT562 - Governance, Risk & Control 562-3 Governance, Risk, and Control. Explains how management identifies and evaluates conditions that increase the risk of failing to achieve business objectives, and how organizations design and implement procedures to control business risk. Describes practices the board of directors rely on to govern enterprise risk management processes by monitoring and assessing the effectiveness of the organization's response to risk.

ACCT563 - Advanced Auditing 563-3 Advanced Auditing. Explains how auditors evaluate business risk, fraud risk, inherent risk, and control risk to assess the risk of misstatement in accounts while planning an audit engagement. Examines analytical procedures, the code of professional conduct, auditor reporting requirements, and auditor legal liability. Prerequisite: ACCT 460. Restriction: enrollment as a graduate student.

ACCT564 - Enterprise Systems 564-3 Enterprise Systems. Enterprise Systems (ERP systems) and technologies have become prevalent in many companies. This course will examine the technical overview of Enterprise Systems and their impact on organizations. The concepts, fundamentals and framework of the advanced systems will be explored to better understand the integration of Enterprise Systems in an organization. A better understanding of Enterprise Systems and its affect on an organization will be gained. Restricted to enrollment in the M.Acc. or M.B.A. programs.

ACCT565 - Advanced AIS 565-3 Advanced Accounting Information Systems. Advanced study in the systems that are used in companies especially database. Students will not be successful as auditors or internal accountants without database skills. The course would include advanced design issues, advanced query and data analysis skills (for internal and external purposes), db controls, db technology, etc. Prerequisite: ACCT 360.

ACCT566 - Accounting Research 566-3 Accounting Research. This course will provide research skills that are critical in Accounting. Students will identify a research topic, develop the research questions, conduct the research, and prepare a research document. The student will be exposed to how research is conducted and will develop the necessary skills to perform accounting research.

ACCT567 - Fraud Examination 567-3 Fraud Examination. Fraud examination will cover the principles and methodology of fraud detection and deterrence. The course includes such topics as skimming, cash larceny, check tampering, register disbursement schemes, billing schemes, payroll and expense reimbursement schemes, non-cash misappropriations, corruption, accounting principles and fraud, fraudulent financial statements, and interviewing witnesses.

ACCT568 - Forensic Accounting 568-3 Forensic and Investigative Accounting. Coverage includes: (1) investigative techniques and forensic accounting processes and tools used in the detection and prevention of fraud against a business entity; (2) definitions and descriptions of various fraudulent schemes; (3) litigation services provided by accountants including expert testimony; (4) methods of calculating losses and damages; and (5) basics of the use of computer aids in forensic investigation.

ACCT569 - Seminar-Audit/Systems 569-3 Seminar - Selected Audit/Systems Topics. Provides students with in-depth exposure to audit and/or accounting systems as it relates to selected topics. Topics will vary from semester depending upon instructor and topics of current interest to the accounting discipline.

ACCT571 - Govt & Non Profit Accounting 571-3 Governmental and Not for Profit Needs. Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations such as governmental units, institutions, and charitable organizations. Also includes the study of governmental auditing standards. Prerequisite: Accounting 321 with a grade of C or better.

ACCT575 - MAcc Capstone-CPA Review 575-3 MAcc Capstone-CPA Review. Capstone course covering financial accounting and reporting, IFRS, governmental accounting, not-for-profit accounting, auditing and attestation, business law, taxation, and business environment and concepts. Emphasis will be reinforcing the knowledge and critical thinking skills necessary for problem solving and communication in the accounting profession.

ACCT591 - Independent Study 591-1 to 6 Independent Study. Directed independent study in selected areas of accountancy. Restricted to enrollment in M.Acc. Program.

ACCT595 - Internship 595-3 Internship. Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and recommendation of the department committee on internship. Graded S/U only.

ACCT599 - Thesis 599-3 to 6 Thesis. Restricted to enrollment in M.Acc. Program.

ACCT601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Accounting Faculty

Hendricks, Scott P., Clinical Assistant Professor, C.P.A., M.A.CC., J.D. Southern Illinois University, 1983.

Karnes, Allan, Professor, Emeritus, C.P.A., M.Acc., J.D., Southern Illinois University, 1986.

Karnes, Darla, Lecturer, C.P.A., M.Acc., Southern Illinois University, 2000.

Morris, Marc E., Associate Professor, J.D., Ph.D., Southern Illinois University, 2009.

Odom, Marcus, Professor, C.P.A., C.F.E., Ph.D., Oklahoma State University, 1991.

O'Donnell, Ed, Professor, C.P.A., Ph.D., University of North Texas, 1995.

Wacker, Raymond F., Associate Professor, Emeritus, C.P.A., Ph.D., University of Houston, 1989.

Walker, Keith, Assistant Professor, C.P.A., Ph.D., Texas Tech University, 2016.

Williams, Benna, Lecturer, C.P.A., M.Acc., Southern Illinois University, 2006.

Zheng, Shucui, Lecturer, M.Acc., Southern Illinois University, 2010.

Aerospace Studies

Aerospace Studies is a voluntary course sequence delivered in conjunction with the AFROTC program on the SIUC campus. Successful completion of the AFROTC program leads to a commission as an officer in the United States Air Force. Students who do not intend to obtain a commission may enroll in the academic portion of the Aerospace Studies curriculum. Enrollment in the academic portions of the Aerospace Studies curriculum is unrestricted, and students incur no military obligation. Only those students who apply for and meet the eligibility criteria for the AFROTC program are permitted to enroll in the laboratory portions of the Aerospace Studies curriculum.

The Aerospace Studies/AFROTC program is divided into the General Military Course (GMC), designed for students with three to five years remaining until graduation, and the two-year Professional Officer Course (POC), for which AFROTC cadets are competitively selected.

The AFROTC GMC prepares students for the POC and provides them with an education focusing on the Air Force Core Values. The GMC courses are designed to provide the basic knowledge, understanding, and experiences, required to compete for selection into the POC. The student learns about followership, leadership, character development, and the values necessary to lead Airmen. Students interested in participating in the AFROTC GMC may enroll, but are subject to certain physical, medical, and other eligibility criteria as specified by the Department of Defense.

Acceptance into the AFROTC Professional Officer Course is highly competitive and requires the applicant to meet all Air Force officer accession standards. Students selected for the POC incur a military obligation. They are paid a monthly tax-free subsistence allowance.

Students selected for continuation into the POC attend a four-week field-training course during the summer prior to entering the POC.

Students interested in an Air Force flying career (Pilot, Remotely Piloted Aircraft, Combat Systems Officer, or Air Battle Manager) are not required to pursue any specific degree. Students interested in an Air Force flying career should select an academic major in a career field which interests them in the event they are not selected for an Air Force flying career. Leadership Laboratory is a supervised laboratory taken concurrently with the Aerospace Studies courses.

Only cadets enrolled in the AFROTC program may participate in the Leadership Laboratory. Non-AFROTC students taking Aerospace Studies courses are not allowed to enroll in the Leadership Laboratory. While enrolled in the GMC, cadets develop leadership potential by participating in practical

leadership situations, participating in and leading drill and ceremonies, learning military customs and courtesies, and engaging in regular physical training.

POC cadets develop leadership skills by assuming command and staff responsibilities, supervising GMC cadets and implementing the goals and training objectives of the AFROTC Leadership Laboratory.

Well-qualified cadets enrolled in the AFROTC program are eligible to compete for scholarships for their remaining years at the University. In addition to tuition, books and fees, the scholarship provides a monthly tax-free subsistence allowance. Tuition waivers are also available on a competitive basis through the Illinois State ROTC Scholarship program. Scholarships do not include costs associated with room and boarding. In addition to the AFROTC commissioning program and courses offered for academic credit, The Department of Aerospace Studies sponsors many extracurricular activities. The Aerospace Club is open to all members of the student body. The Arnold Air Society, a national honorary service organization, is open to selected AFROTC cadets. The AFROTC Honor Guard is open to AFROTC cadets on a competitive basis. Honor Guard members participate in local community events and in drill competitions throughout the region.

Further information may be obtained from the Department of Aerospace Studies (Air Force ROTC), Mailcode 6718, Carbondale, Illinois 62901, by phone at (618) 453-2481, or on the web at <http://afrotc.siu.edu/>.

Aerospace Studies Minor

A minor in Aerospace Studies is structured to broaden the background of students so they may learn more about the Air Force, its role in society, its history, and its officers. With a minor in Aerospace Studies, the civilian leaders of tomorrow will have a better understanding and appreciation of the vital role the Air Force performs in today's world. AFROTC cadets are also welcome to declare Aerospace Studies as a minor.

A minor in Aerospace Studies consists of a minimum of 16 semester hours, including AS 101, 102, 201, 202 (one semester hour each), 301, 302, 401 and 402 (three semester hours each).

Declaration and/or acceptance of Aerospace Studies as a minor does not constitute acceptance into the General Military Course, the Professional Officer Course, or any other association with the Air Force or AFROTC. A student who is not an AFROTC cadet who wishes to work toward a minor by attending the Aerospace Studies academic courses will be listed within the Department of Aerospace Studies as a special student. He or she may not attend any other AFROTC functions or classes, nor will the student be considered for any AFROTC scholarships, stipends, or privileges.

Aerospace Studies Courses

AS101 - The Air Force Today I 101-1 The Air Force Today I. Part 1 of a 2-part course, this survey course is designed to introduce first-year students to the United States Air Force and provide an overview of the basic characteristics, missions, and organization of the Air Force. Students will also focus on communication skills. Course is open to all students. If the student is a member of the AFROTC Program, concurrent enrollment in AS 101A is required.

AS101A - Leadership Laboratory 101A-2 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. A mandatory fitness program is included; a pre-participatory sports physical must be completed prior to entering the fitness program. First-year students are introduced to basic Air Force concepts and practices. Course is only

open to students who are members of the AFROTC Program and concurrent enrollment in AS 101 is required.

AS102 - The Air Force Today II 102-1 The Air Force Today II. Part 2 of a 2-part course, this survey course is designed to introduce first-year students to the United States Air Force and provide an overview of the basic characteristics, missions, and organization of the Air Force. Students will also focus on communication skills. Course is open to all students. If the student is a member of the AFROTC Program, concurrent enrollment in AS 102A is required.

AS102A - Leadership Laboratory 102A-2 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. A mandatory fitness program is included; a pre-participatory sports physical must be completed prior to entering the fitness program. First-year students are introduced to basic Air Force concepts and practices. Course is only open to students who are members of the AFROTC Program and concurrent enrollment in AS 102 is required.

AS201 - Evolution USAF & Space Power I 201-1 The Evolution of United States Air Force and Space Power I. Part 1 of a 2-part course, designed for second-year students, this course features topics on Air Force heritage and leaders; introduction to air power through examination of the Air Force Core Functions; and continued application of communication skills. Course is open to all students. If the student is a member of the AFROTC Program, concurrent enrollment in AS 201A is required.

AS201A - Leadership Laboratory 201A-2 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. A mandatory fitness program is included; a pre-participatory sports physical must be completed prior to entering the fitness program. Course helps second-year students prepare for the Air Force summer training program between the second and third years of the Air Force ROTC program. Course is only open to students who are members of the AFROTC Program and concurrent enrollment in AS 201 is required.

AS202 - Evolution USAF & Space Power II 202-1 The Evolution of United States Air Force and Space Power II. Part 2 of a 2-part course, designed for second-year students, this course features topics on Air Force heritage and leaders; introduction to air power through examination of the Air Force Core Functions; and continued application of communication skills. Course is open to all students. If the student is a member of the AFROTC Program, concurrent enrollment in AS 202A is required.

AS202A - Leadership Laboratory 202A-2 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. A mandatory fitness program is included; a pre-participatory sports physical must be completed prior to entering the fitness program. Course helps second-year students prepare for the Air Force summer training program between the second and third years of the Air Force ROTC program. Course is only open to students who are members of the AFROTC Program and concurrent enrollment in AS 202 is required.

AS258 - Work Experience 258-1 to 12 Aerospace Studies Work Experience. Credit granted for military service. The department director may accredit up to the entire General Military Course (GMC) (4 hours for non-AFROTC students and 12 hours for AFROTC cadets). Students seeking accreditation must have received an honorable or general discharge. Credit to be determined by departmental evaluation. Students seeking accreditation for any period of military service must provide their DD Form 214. Restricted to students with 6 semester hours of AS courses with a C or better and permission of the instructor.

AS259 - Occupational Training 259-1 to 12 Aerospace Studies Occupational Education Training. Credit is awarded for certain documented aerospace education or training related to the student's educational objectives. Credit will be established by departmental evaluation. Restricted to students with 6 semester hours of AS courses with a C or better and permission of the instructor.

AS301 - AF Leadership Studies I 301-3 Air Force Leadership Studies I. Part 1 of a 2-part course, for third-year students, this course focuses on advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership and communication skills. Course is open to all students. If the student is a member of the AFROTC Program, concurrent enrollment in AS 301A is required.

AS301A - Leadership Laboratory 301A-2 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. A mandatory fitness program is included. Third-year students demonstrate practical application of leadership concepts learned during previous summer training program. Course is only open to students who are members of the AFROTC Program and concurrent enrollment in AS 301 is required.

AS302 - AF Leadership Studies II 302-3 Air Force Leadership Studies II. Part 2 of a 2-part course, for third-year students, this course focuses on advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership and communication skills. Course is open to all students. If the student is a member of the AFROTC Program, concurrent enrollment in AS 302A is required.

AS302A - Leadership Laboratory 302A-2 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. A mandatory fitness program is included. Third-year students demonstrate practical application of leadership concepts learned during previous summer training program. Course is only open to students who are members of the AFROTC Program and concurrent enrollment in AS 302 is required.

AS401 - Natl Security Affrs/AD I 401-3 National Security Affairs/Preparation for Active Duty I. Part 1 of a 2-part course, designed for fourth-year students, this course provides a foundational understanding of the role of military officers in American society. It is an overview of the complex social and political issues facing the military profession. Course is open to all students. If the student is a member of the AFROTC Program, concurrent enrollment in AS 401A is required.

AS401A - Leadership Laboratory 401A-2 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. A mandatory fitness program is included. Fourth-year students demonstrate practical application of leadership concepts through leadership of the cadet corps. Course is only open to students who are members of the AFROTC Program and concurrent enrollment in AS 401 is required. Not for graduate credit.

AS402 - Natl Security Affrs/AD II 402-3 National Security Affairs/Preparation for Active Duty II. Part 2 of a 2-part course, designed for fourth-year students, this course provides a foundational understanding of the role of military officers in American society. It is an overview of the complex social and political issues facing the military profession. Course is open to all students. If the student is a member of the AFROTC Program, concurrent enrollment in AS 402A is required.

AS402A - Leadership Laboratory 402A-2 Leadership Laboratory. Weekly laboratory consisting of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies. A mandatory fitness program is included. Fourth-year students demonstrate practical application of leadership concepts through leadership of the cadet corps. Course is only open to students who are members of the AFROTC Program and concurrent enrollment in AS 402 is required. Not for graduate credit.

Aerospace Studies Faculty

Hansen, Craig A., Lieutenant Colonel, USAF. Adjunct Professor of Aerospace Studies, MAS (Operations Management), Embry Riddle Aeronautical University, 2005.

Holt, Michael J., Major, USAF. Adjunct Assistant Professor of Aerospace Studies, MPA (Public Administration), American Military University, 2013.

Africana Studies

Students who wish to enroll in Africana Studies as their sole or primary Major will be expected to fulfill the general requirements of the College of Liberal Arts. Students who wish to enroll in Africana Studies as an added Major and who are primarily enrolled in a college at SIU Carbondale other than the College of Liberal Arts must fulfill their college's general requirements. Only Africana Studies courses completed with a least a C will fulfill the major requirement.

A minor in Africana Studies consists of a minimum of 20 hours, which are to be selected from Africana Studies course offerings and organized according to each individual student's field of interest. Africana Studies 311A,B is required for the minor.

All Africana Studies courses do not require prerequisites.

Bachelor of Arts Degree in Africana Studies, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include AFR 215 and AD 227	41
College of Liberal Arts Academic Requirements	14
Africana Studies Requirements - AFR 109; AFR 209; AFR 311A; AFR 311B; AFR 334; AFR 375; AFR 475; AFR 494*; AFR 496*; or AFR 499	39
Electives for Specialization	
Three 3-hour courses from any of the following: AFR Courses (300- or 400-level; including "African Cultural Continuities") Approved Courses in Fine Arts/Humanities (Music, Theater, Communication Studies, Art and Design, Cinema and Photography, Radio, Television & Digital Media, Philosophy, English) Approved Courses in Social Sciences (History, Sociology, Psychology, Anthropology, Social Work, Political Science)	(9)
All Africana Studies majors will be advised to take at least one section of AFR 399 ("Independent Study") which will be a focused opportunity for assessment of student learning	
Electives	26
Total	120

Africana Studies Courses

AFR109 - Intro to Black America 109-3 Introduction to Black America. A survey course designed to expose the student to various aspects of the black experience. Aspects included are history, literature, theology, the arts, etc. The textbook is a collection of essays designed to use especially in this course and is supplemented by guest lecturers and audiovisual materials.

AFR135 - 3rd World: African Model 135-3 The Third World: The African Model. Study of Third World through a focus on Africa as a model; emphasis on the cultural traditions, impact of the West, and the problems facing Third World nations today.

AFR209 - Critical Issues Black Amer Exp 209-3 Critical Issues in the Black American Experience. Insights into the black American experience. Concepts including race, ethnicity, class, caste, minorities, prejudice, discrimination will be analyzed. Main focus is on exploration of critical socio-economic, political, and cultural themes such as demographic trends; migration and urbanization, political participation and

strategies, income and employment, housing, health, education, black family, black religion, law, and justice. Prerequisite: AFR 109 recommended but not required.

AFR215 - Blk Am Exp-Pluralistic Society 215-3 Black American Experience in a Pluralistic Society. (University Core Curriculum) A study and understanding of the evolution of issues of pluralism in contemporary African American society. This course provides an interdisciplinary analysis of ideological and practical problems of racism, integration, class, equity, social institutions as they relate to the Black American experience.

AFR225 - Social Change in Africa 225-3 Social Change in Africa. Examination of the interplay between tradition and modernity in an effort to understand the new Africa. Some of the forces of social change are analyzed. Other topics include African women and the family structure in change and the problems of African development.

AFR227 - Hist African American Art 227-3 History of African American Art. (Same as AD 227) (University Core Curriculum Course) A history of African American visual arts, with a brief examination of the arts of various nations of Africa and how they affected art in America. Craft arts, architecture, painting and sculpture will be considered from the slave trade era to the Civil War era; the Harlem Renaissance and other 20th Century movements to the present day.

AFR230 - Intro to Black Sociology 230-3 Introduction to Black Sociology. An introductory course that focuses on the concepts of black sociology in order to fill the gaps of traditional sociology pertaining to the black experience. Designed to heighten the student's awareness of the black identity and the sociological phenomena, which affect it and acquaints the student with specific sociological problems in the study of Afro-Americans.

AFR257 - Black Amer Studies Choir 257-1 Black American Studies Choir. Special approval needed from the instructor.

AFR303I - Women, Blues & Literature 303I-3 Women, Blues & Literature. (Same as MUS 303I, WGSS 303I) (University Core Curriculum) Explores traditional aesthetic processes of the blues as a mode of self expression. Examines the images/voices projected by vaudeville blues women (1920s/30s), along with various manifestations/extensions-instrumental and vocal, musical and literary-from fiction and poetry to jazz, R&B, and rap. In-depth analysis of blues music and literature.

AFR310A - Peoples & Cultures of Africa 310A-3 Peoples and Cultures of Africa. (Same as ANTH 310A) Introduction to the prehistory, cultural history, and modern cultures of people of Africa.

AFR311A - Black American History to 1865 311A-3 Black American History. (Same as HIST 362A) Black American History to 1865. The role of blacks and contribution in the building of America and the ongoing fight for equality. Required for the minor.

AFR311B - Black American Hist Since 1865 311B-3 Black American History Since 1865. (Same as HIST 362B) The role of blacks and contribution in the building of America and the ongoing fight for equality. Required for the minor.

AFR314A - History of Africa to 1800 314A-3 History of Africa to 1800. (Same as HIST 387A) A chronological study of African peoples from earliest times to the present, including ancient Egypt, Ethiopia, the Era of the African Kingdoms, the role of Islam, the slave trade, African-European relations, colonialism, African nationalism and independence.

AFR314B - History of Africa Since 1800 314B-History of Africa Since 1800. (Same as HIST 387B) A chronological study of African peoples from earliest times to the present, including ancient Egypt, Ethiopia, the Era of the African Kingdoms, the role of Islam, the slave trade, African-European relations, colonialism, African nationalism and independence.

AFR320 - Leaders of the Black World 320-3 Leaders of the Black World. A study of black rulers; governmental representatives; activists; and thinkers; both past and present; in Africa; the West Indies; and the United States, with emphasis on the effects of their philosophies on the black world.

AFR325 - Black American Writers 325-3 Black American Writers. (Advanced University Core Curriculum course) (Same as ENGL 325) (IAI Course: H3 910D) Poetry, drama, and fiction by Black

American writers. Satisfies the University Core Curriculum Multicultural requirements in lieu of English 205.

AFR326 - African American Politics 326-3 African American Politics. (Same as POLS 326) Designed to familiarize students with the role of African-Americans in American politics. An emphasis is placed on describing and analyzing how the structure of the American political system affects efforts by African-Americans in gaining the full benefits of the American political system. It will also address contentious sociopolitical issues that affect how African-Americans are treated in the context of the larger society.

AFR330 - Black American Social Problems 330-3 Black American Social Problems. Comparative study of the social problems which afflict black Americans and other minorities and their consequences; including crime and delinquency, mental and emotional disorders, drug addiction, housing conditions, poverty and unemployment, and labor conditions. Special approval needed from the instructor.

AFR332 - Black Americans and Law 332-3 Black Americans and Law. (formerly BAS 332) Investigates the long and complex relationship of U.S. Law and African Americans, from the Colonial Period through the Civil Rights era and more recently as issues such as mandatory sentencing and the expansion of offenses punishable by law have become widespread in U.S. society.

AFR333 - The Black Family 333-4 The Black Family. Exploring the myths and realities of the black family from sociological and psychological perspectives through a critical examination of scholarly controversies and research. Restricted to junior standing.

AFR334 - Psyc of African Am Experience 334-4 Psychology of African/African American Experience. (Same as PSYC 334) Examines psychological characteristics of African descent, using an Africentric conceptual model. Theoretical models will be critiqued and empirical data will be examined. Selected issues include: critiques of research methodologies involving African descended populations; African American identities and personality development, psychopathology and cognitive development issues (i.e., language).

AFR339 - Black Am/Correctional Process 339-3 Black Americans and the Correctional Process. Analysis of selected topics: the prison community and the black inmate; correction education and the black inmate; and the black professional.

AFR351 - African-Atlantic Spirituality 351-3 African-Atlantic Spirituality. (Same as HIST 351) This course explores the ways that African-Atlantic societies have expressed the interaction of people in the visible world with the spiritual powers of the invisible world. The course begins with the ancient foundations of these spiritual systems and then examines the historical transformation of these systems in West Africa, Central Africa, and the Americas into the twentieth century.

AFR355 - Black American Novel 355-3 The Black American Novel Since Native Son. The black American novel and its major themes since Richard Wright's Native Son. Includes such authors as Baldwin, Petry, Williams, etc.

AFR355A - Surv Afr Am Lit to 1940 355A-3 Survey of African American Literature, Part 1. (Same as ENGL 355A) Course traces evolution African American Literature from roots in such Afri-based secular and sacred oral texts as folk tales, work songs, the Spirituals, Blues and other verbal forms, through the emergence of written texts, the eighteenth century up to the end of the Harlem Renaissance in 1940. Among these concerns are the continuing quest for freedom, identity, protest against oppression, and writers' interpretation of enduring African American spiritual and cultural values.

AFR355B - Survey Afr Am Lit Since 1940 355B-3 Survey of African American Literature, Part 2. (Same as ENGL 355B) Examination of literary texts, voices and movements in the USA from 1940 to present. Among these concerns are the continuing quest for freedom, identity, protest against oppression, and writers' interpretation of the enduring African American spiritual and cultural values. Focus on the major developments in African American literature after the Harlem Renaissance and its impact on the contemporary literature of African Americans.

AFR357 - Blacks in the Performing Arts 357-3 Blacks in the Performing Arts. History of the role of blacks in the performing arts covering dance companies, ballet, folk dance and black dramatists; cinema, in all its forms; radio and television; and music (spirituals, jazz, opera, classics, etc.)

AFR360 - Race & History in U.S. 360-3 Race and History in the United States. (See HIST 361)

AFR375 - Topics: Africana Aesthetics 375-3 to 6 Topics in Africana Aesthetics. Course will investigate theories of African art, especially music, dance, sculpture, textile design and adornment styles of cultural groups in West Africa. Cultural transferences and continuities of African art as found in the African diaspora (with special attention to African American art production) will also be studied. Students will be expected to develop a philosophy of art.

AFR388 - World Wars Africa 388-3 The World Wars in Africa. (Same as HIST 388) An account of the world wars in African history. Topics to be covered include an examination of the spilling of European conflicts over into Africa, the battle grounds, manpower and resource mobilization with an emphasis on the role of women, the social, economic, and political impacts of the wars on African societies and African combatants, the role of non-European powers (South Africa and the United States), and how the wars enhanced political awareness of Africans in their struggles for independence, particularly after World War II.

AFR399 - Independent Study in AFR 399-1 to 6 Independent Study in Black American Studies. Independent study, which examines problems and issues not covered in a specific course. Hours and subject matter decided during consultation with a faculty member. Special approval needed from the instructor and director of program.

AFR410H - African Expressive Culture 410H-3 African Expressive Culture. (Same as ANTH 410H) This course examines aspects of African expressive culture including the visual arts, music, dance, orature, cinema, drama, and ceremony from an anthropological perspective. Particular attention is given to analysis of African expressive culture in social context and the role of the arts in the practice of politics, religion, medicine, and other aspects of African life. Many of the expressive genres examined deal with historical representation and political resistance. Therefore, this course provides insights into African history and politics through the creation of African artists.

AFR416 - Black Feminist Thought 416-3 Black Feminist Thought as Theory and Praxis. (Same as CMST 416 and WGSS 416) Explore the roots, contemporary manifestations, and current embodiments of Black feminist thought. Explore the works of Black women to engage in critical thinking and thoughtful dialogue that positions the valuable knowledge, experiences and perspectives of women of color at the center of inquiry while simultaneously discovering spaces for multicultural alliances.

AFR420 - Themes in Africana Drama 420-3 Themes in Africana Drama. (Same as THEA 460) Explores significant themes in African and African American drama, with special attention to performance styles and cultural issues.

AFR430 - Black Political Socialization 430-3 Black Political Socialization. Definitive approach to how people learn about politics focusing on blacks because of their unique experience; i.e., prolonged minority group status. Research oriented, in that, it takes an explanative and predictive approach to produce models of political learning. Not for graduate credit. Restricted to junior or senior standing, or consent of department.

AFR447 - Comm Race and Ethnicity 447-3 Communicating Race and Ethnicity. (Same as CMST 447) Via intercultural theories and methods, this course explores histories, relationships, interactions and recent events by positioning racial and ethnic perspectives at the center of inquiry. The course critically examines the complexities of race, racism and ethnicity by focusing on how people communicate across racial and ethnic differences in different contexts.

AFR452A - Uppity Women's Blues 452A-3 Traditions of Uppity Women's Blues. (Same as MUS 452A, WGSS 452A) Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conventions of gender and sexuality, racism, sexism, classism, and homophobia. Restricted to junior/senior/graduate music major or consent of instructor.

AFR452B - Blues-BW Piano Styles 452B-3 Blues and Boogie Woogie Piano Styles. (Same as MUS 452B) Traces the history, culture, and stylistic developments of blues and boogie woogie piano. Explores

socio-cultural contexts and examines key players, pieces, and musical styles. Restricted to junior/senior/graduate music major or consent of instructor.

AFR458 - Bantu Diasporas 458-3 Bantu Diasporas in Africa & the Atlantic World. (Same as HIST 458) This course examines the origins and development of Bantu language and culture groups in Africa and the Atlantic World from the first dispersal of Bantu-speaking people thousands of years ago through the end of slavery in the Americas. Additionally, the course explores the multiple methods and disciplines used to construct histories of Bantu language and culture groups.

AFR460 - Slavery & The Old South 460-3 Slavery and The Old South. (Same as HIST 460) This course examines slavery and southern distinctiveness from the colonial period to 1861. Discussion topics include the plantation system, race relations, women and slavery, and southern nationalism.

AFR461 - Black Ams on Western Frontier 461-3 Black Americans on the Western Frontier. (Same as HIST 461) This course examines the history of African Americans in the American West. Taking both a chronological and thematic approach, it begins with a discussion of early black explores in the age of encounter, and ends with a focus on black western towns established in the United States by the 1880's.

AFR465 - Govt & Politics Sub-Sahara Afr 465-3 Governments and Politics of Sub-Saharan Africa. An examination of the impact of western colonial rule on the societies and politics of Africa, the method by which these colonial areas became sovereign states in the post-World War II era, the role of domestic political institutions, African political thought and behavior, and the development of foreign policies regarding relations with other African states, continental and international organizations, and international organizations, and non-African states.

AFR472 - Psychology of Race and Racism 472-3 Psychology of Race and Racism. (Same as PSYC 470) A review of the history and evolution of the construct of race as a psychological phenomenon. The persuasiveness of race in every sphere of life will be studied, from a multidisciplinary perspective.

AFR473 - Comparative Slavery 473-3 Comparative Slavery. (Same as HIST 473) A comparative study of slavery from antiquity to its abolition in the 19th century with the differing socio-cultural, political and economic contexts; organized chronologically, regionally, and thematically.

AFR475 - Education & Black America 475-3 Education and Black America. This course uses the best scholarship of cultural anthropology and social studies to look at the history of education in the African American community; how public education affects African American families; how school shape cultural change and how racial, ethnic peer group, and gender issues help determine curriculum issues. For graduate credit.

AFR478 - Southern Africa, 1650-1994 478-3 Southern Africa, 1650-1994. (Same as HIST 478) An examination of Southern African history with emphasis on South Africa from 1652 to 1994. Topics to be covered include conflicts and wars, migrations and state formations, the economics of minerals, industrialization and the Anglo-Boer War, intertwined histories of race relations, the politics of exclusion and apartheid, and the making of modern South Africa.

AFR491 - Indep Reads Africana Studies 491-3 to 6 Independent Readings in Africana Studies. Special topics, focused on research needs of students who are regularly enrolled in upper-division courses, especially graduate students doing research in Africana related topics in other departments and programs. May be repeated for up to six credit hours. Special approval needed from the director of the AFR program.

AFR494 - Methodology Seminar 494-3 Methodology Seminar in Africana Studies. This course provides the theoretical framework for research in the field of Africana Studies. Students will investigate the foundations of the field of Black Studies, from the arguments of Maulana Karenga and Molefi Asante, to the challenges of scholars such as Manning Marable, James Turner and other recent scholars. Students will pursue individual research projects appropriate to various academic disciplines which constitute the field of Africana Studies. May be taken for graduate credit.

AFR495 - African Cultural Continuities 495-3 to 9 African Cultural Continuities: Study Abroad. Study abroad 4-6 week program is designed to introduce similarities in culture (food, dance, music, family traditions, religion) of people in Ghana and in the cultures of people in the African diaspora. Class begins

on the SIUC campus and will relocate to Elmina and Cape Coast, Ghana, during the first year of a three-year sequence. Other years will locate in areas of the West Indies, Caribbean & Central America. May be taken for graduate credit. Special approval needed from the instructor.

AFR496 - Slave Narratives 496-3 Slave Narratives. Using compilations of the 19th and early 20th century body of work known as "Slave Narratives", students will organize research projects that discover selected major themes of Africana Studies. The course will be useful to students from various academic disciplines (such as Psychology; Music; Sociology; History; Philosophy; Education; Literature; and Theology, among others) as they place Slave Narratives in the center of Africana and American Studies scholarship. May be taken for graduate credit.

AFR497 - Civil Rights Movement 497-3 The U.S. Civil Rights Movement. (Same as HIST 487) This course provides an overview of the history of the Civil Rights Movement while engaging major debates in the field of Black Freedom Studies. Central themes will include the impact of the Cold War, the roles of women, and the relationship of civil rights to black power. We will also discuss the difference between popular memory and historical scholarship as well as the meaning of such discussions for contemporary issues of racial and economic justice.

AFR499 - Special Tpcs Africana Studies 499-3 to 9 (3 per topic) Special Topics in Africana Studies. Topics vary and are announced in advance. May be repeated as the topic varies. No prerequisites.

AFR499A - Hist African Amer Philosophy 499A-3 History of African American Philosophy. (Same as PHIL 451) A survey of major thinkers and themes in the history of African American Philosophy from colonial times to the 20th century.

AFR499B - Philosophy of Race 499B-3 Philosophy of Race. (Same as PHIL 455) A survey of critical examination of a range of theories on the nature and meaning of "race", the intersection of race with class and gender, and the promotion of racial progress. Such theories include racial realism and idealism, racial biologism, cultural race theory, social constructivist theory, integrationism, separatism, racial eliminativism, cosmopolotianism, and especially critical race theory.

AFR499C - Topics Africana Philosophy 499C-1 to 6 Topics in Africana Philosophy. (Same as PHIL 459) A seminar on varying topics, themes, and figures in African, African American, and/or Caribbean Philosophy, e.g., "W.E.B. Du Bois and His Contemporaries," "Pan Africanism," "Philosophies of Liberation," "Black Feminism," "Contemporary African Philosophy," "Philosophies of the Caribbean."

Africana Studies Faculty

Brown, Joseph A., Professor, Ph.D., American Studies, Yale University, 1984.

Chipasula, Frank, Associate Professor, Ph.D., Black American Studies, English, Brown University, 1987.

Gadzekpo, Leo K., Associate Professor, Ph.D., American Cultural Studies, Bowling Green University, 1997.

Smoot, Pamela A., Clinical Assistant Professor, Ph.D., American History, Michigan State University, 1998.

Agribusiness Economics

The need to better utilize our natural resources and protect our environment, improve our rural infrastructure, and manage the activities of food/fiber production, processing, and distribution firms in an international setting is creating career opportunities at a quickening pace.

Agribusiness Economics offers a flexible program, which, under the supervision of a faculty advisor, allows the student to pursue either a comprehensive or more specialized course of study in preparation to assume an effective professional role in our dynamic, global, economic, and social environment.

Courses in Agribusiness Economics in the traditional areas of farm management and marketing emphasize accepted techniques to improve efficiency and farm profitability. Course offerings in

agribusiness management, finance, sales, marketing, and commodity futures prepare students to assume positions with a broad range of businesses that comprise the agribusiness sector; from input suppliers to farmers through merchandising and processing agricultural commodities to retail sales to consumers. Course offerings in environmental, energy, and natural resource economics, agribusiness management, rural development, food policy and agricultural law introduce the needed applied economic skills for effective decision making, complement a more specialized course of study, and provide the basis for dealing with contemporary societal problems.

The Agribusiness Economics major involves a set 22 hours of agribusiness economics core requirements as well as 15 elective hours in agribusiness economics including at least six hours at the 400-level. Students also have 15 hours of business, economics and methodology requirements, six hours of communication courses over and above the nine hours required by the University Core Curriculum, and 24 hours of electives. Students working with their faculty advisors will be able to plan an academic program tailored to their particular interests and/or career paths, e.g., Agribusiness Management and Finance; Energy and Environmental Policy; Farm Business Management; Sales and Marketing; Energy; and Pre-Law. Sample programs of study based on these and other areas of interest are available from the department. A few examples are provided in what follows; however, these are only a few of the possibilities open to students.

Technology Fee

The College of Agricultural Sciences assesses College of Agricultural Sciences undergraduate majors a technology fee of \$4.58 per credit hour up to twelve credit hours. The fee is charged Fall and Spring semesters.

Bachelor of Science Degree in Agribusiness Economics

Degree Requirements	Credit Hours
University Core Curriculum Requirements - ABE 204	41
Requirements for Major in Agribusiness Economics	55
Agribusiness Economics Core - ABE (204); ABE 318; ABE 330; ABE 340, ABE 350 or ABE 360; ABE 351; ABE 361 or ABE 362; ABE 381-1 to 4; ABE 440, ABE 442, ABE 444, ABE 450, ABE 461 or ABE 463	19
Agribusiness Economics Electives (six at 400-level)	15
Communication Requirements - CMST 221, CMST 280 or equivalent; ENGL 291, AS 314, ENGL 290, MGMT 202	6
Business, Economics, and Methodology Requirements - ACCT 220, AS 118, ECON 240, ECON 241, ABE 419 or equivalent	15
Other Electives - (at least nine at 300-level, six at 400-level)	24
Total	120

In addition to the traditional major, the department participates in the University's Capstone Option. Through this program, students who graduate with an Associate in Applied Science (AAS) from a community college can earn a Bachelor of Science degree by taking 60 hours of coursework at SIU. Through this option, an individualized study plan is written for each student. While our Capstone Option is based on 70 hours, the vast majority of students transfer in 10 or more credit hours that apply to their

capstone option, and their individualized program reflects only the 60 hours they must complete under the rules of the university's capstone option.

Agribusiness Economics Capstone Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	30
Requirements for Major in Agribusiness Economics	40
Agribusiness Economics Core - ABE 204; ABE 318; ABE 330; ABE 340, ABE 350 (Fall) or ABE 360 (Spring); ABE 351; ABE 361 (Fall) or ABE 362 (Spring); ABE 381-1 to 4; ABE 440, ABE 442, ABE 444, ABE 450, ABE 461 or ABE 463	22
Communication Requirements - CMST 221, CMST 280 or equivalent; ENGL 291, AS 314, ENGL 290, MGMT 202	6
Business, Economics and Methodology Requirements - ACCT 220, AS 118, ECON 240 or ECON 241, ABE 419, or equivalent	12
Total ¹	120

1 1 Students are required to take one of ABE 340, ABE 350 (Fall) or ABE 360 (Spring) 2 Students take either ABE 361 (Fall) or ABE 362 (Spring) 3 Students take either ABE 440 (Spring) ABE 444 (Fall), ABE 461 or ABE 463 (Spring) 4 MATH 108, MATH 139 or MATH 140 recommended for students with appropriate preparation 5 Students may take ABE 381 in either (Fall or Spring)

Examples of Agribusiness Economics Programs of Study for Different Career Tracks

Sales and Marketing Career

Suggested Agribusiness Economics electives:

ABE 333, ABE 360, ABE 363, ABE 453, ABE 462, ABE 401, ABE 460

Suggested College of Agricultural Sciences electives:

CSEM 200, CSEM 300

Suggested other electives (24 hours – minor in Economics):

MKTG 304, MKTG 336, MKTG 390, MKTG 435

Energy and Environmental Policy

Agribusiness Economics courses:

ABE 204, ABE 318, ABE 330, ABE 340, ABE 351, ABE 381, ABE 440 and ABE 444

Other Agribusiness courses:

ABE 401, ABE 453, ABE 463

Other suggested courses:

ACCT 230, ECON 240 and ECON 241, ECON 340 or ECON 341, ECON 408

GER 401, GER 420

POLS 325, POLS 444, POLS 445

Farm Business Management

Agribusiness Economics core courses:

ABE 204, ABE 318, ABE 330, ABE 350, ABE 351, ABE 361 or ABE 362, ABE 381, ABE 450

Other Agribusiness Economics courses:

ABE 333, ABE 340, ABE 361 or ABE 362, ABE 363, ABE 401, ABE 460, ABE 453

Other Agriculture courses students may wish to develop their technical skill in a particular production area by

selecting other agricultural courses:

AS 121, AS 122, AS 315, AS 430, AS 465, AS 485, AGRS 472, CSEM 200, CSEM 300, CSEM 419, CSEM 468, HORT 220, HORT 333, HORT 423, HORT 432

Other Suggested Courses:

ACCT 230

Agribusiness Management & Finance

Agribusiness Economics core courses:

ABE 204, ABE 318, ABE 330, ABE 351, ABE 360, ABE 361 or ABE 362, ABE 461, ABE 381

Other Agribusiness Economics courses:

ABE 333, ABE 340, ABE 363, ABE 401, ABE 453, ABE 460, ABE 463

Other Suggested Courses:

ACCT 230, ECON 240 & ECON 241, MKTG 304, MKTG 336

Agricultural and Rural Real Estate Appraisal

Agribusiness Economics core courses:

ABE 204, ABE 318, ABE 330, ABE 350, ABE 351, ABE 361 or ABE 362, ABE 381, ABE 450

Other Agribusiness Economics courses:

ABE 333, ABE 340, ABE 361 or ABE 362, ABE 401, ABE 451, ABE 453

Other Suggested Courses:

FIN 320, FIN 321, FIN 322, FIN 323, FIN 330, CSEM 240

Agribusiness Economics Minor

A minor in agribusiness economics is offered. A minor consists of 15 semester hours of credit of which three credit hours must be at the 400-level. Twelve (12) hours must be taken at Southern Illinois University Carbondale. An advisor within the department must be consulted before selecting this field as a minor.

Agribusiness Economics Courses

ABE204 - Food, Fiber, & Nat Resources 204-3 Introductory Economics of Food, Fiber, and Natural Resources. [IAI course: AG 901] (Advanced University Core Curriculum Course) An introduction to the economics and policies underlying food and fiber production, distribution, and consumption as well as the use of environmental and natural resources.

ABE257 - Work Experience 257-1 to 10 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Special approval needed from the chair. Mandatory Pass/Fail.

ABE258 - Past Work Experience 258-1 to 30 Past Work Experience. Credit for career related employment based on the evaluation of the documentation of this experience by the Department of Agribusiness Economics. No grade for past work experience. Special approval needed from the chair.

ABE300I - Social Perspectives 300I-3 Social Perspectives on Environmental Issues. (Same as AGRI/LAC 300I) (University Core Curriculum) Case studies (e.g., rural village in developing nation; small town in the U.S.; city in developing nation) are used to learn how different societies and groups deal with their specific environmental issues, and how culture and economic factors affect their perspectives and actions.

ABE302 - Country Living Mgt & Info 302-2 Country Living Management and Information. Managing a small acreage as an avocation. Types of decision problems and sources of information.

ABE318 - Agribusiness Statistical Methods 318-3 Agribusiness Statistical Methods. Statistical methods applied to agribusiness economics, including survey design, sampling, graphic presentation of data, index numbers, statistical inference, basic linear regression and correlation.

ABE330 - Applied AgBus Economics 330-3 Principles of Agribusiness Economics: Theory and Applications. The student will enhance their understanding of and ability to apply the principles of economics to the unique problems of the agricultural sector. The course covers the theory of resource allocation with a rural emphasis. The following topics are taken up in a case study framework: production of food and fiber, the agribusiness sector and markets, rural community development, and environmental and natural resource use and conservation. The roles of governmental policy, international trade organizations, and treaties are included throughout the course. Prerequisite: ABE 204.

ABE333 - Professional Agri-selling 333-3 Professional Agri-selling. Focuses on professional Agri-selling and the sales process. Topics include different methods of selling, steps and techniques in the selling process, customer service, sales ethics, consumer behavior concepts and sales management. Critical skills of self-management, communication, and interpersonal values are examined. Opportunities of a career in Agri-selling are surveyed.

ABE340 - US/Global Food Policies 340-3 Domestic and International Food Policies. Examination of domestic and international policies that affect the production of food products. Topics will include a review of existing and former policies designed for American producers (e.g., commodity programs to support farm income, risk management and conservation of resources). Food safety policies will be examined. In addition, aspects of international trade including policies (NAFTA), practices, and institutions (WTO, World Bank, etc.) as they relate to access to foreign markets will be reviewed. Prerequisite: ABE 204 or consent of instructor.

ABE350 - Farm Management 350-3 Farm Management. Efficient organization and management of a farming operation. Emphasis on crop and livestock selection, management of farm resources, farm budgets and records analysis, and farm leases. Prerequisite: ABE 204 or one course in economics. Student will incur field trip expenses not to exceed \$5.

ABE351 - Financial Mgt in Agriculture 351-3 Financial Management in Agriculture. Analysis of the capital structure of agriculture and sources of capital. Credit analysis of agribusiness firms using financial statements, firm growth, capital budgeting, and tax considerations. Prerequisite: ABE 204 or equivalent.

ABE359 - Internship Program 359-1 to 6 Internship Program. Supervised work experience program in either an agricultural agency of the government or agribusiness. Restricted to junior standing or consent. Mandatory Pass/Fail.

ABE360 - Agribusiness Mgt & Organiztn 360-3 Agribusiness Management and Organization. Problems and practices in agribusiness operations including management practices, decision-making tools, financial analysis, economic considerations in managing land, labor and capital, and the impact of alternative organizational forms are emphasized. The focus is on applications to real world problems. Students are provided an opportunity to interact with business managers through a series of guest speakers. Prerequisite: ABE 204 or equivalent.

ABE361 - Agribusiness Marketing Mgmt 361-3 Agribusiness Marketing Management. An overview of marketing practices and strategies employed by agribusiness product and service firms. Market research, market segmentation and product mix development are among the topics reviewed. Students participate in case analysis and marketing plan development projects. Prerequisite: ABE 204 or equivalent.

ABE362 - Mktg & Pricing Ag Products 362-3 Marketing and Pricing Agricultural Products. Institutional arrangements in marketing agricultural products. Market structure, marketing costs, and alternative methods of pricing agricultural products are also examined. Prerequisite: ABE 204 or equivalent.

ABE363 - Commodity Price Risk Mgt 363-3 Commodity Price Risk Management. The focus is on the use of financial instruments, including futures and options, to manage price risk in modern agribusiness. Topics covered include: commodity futures and options, cash forward and other over-the-counter contracts, hedging, spreading, basis risk and basis trading. Applications and examples are provided for commodity producers, end-users, and the processors. The mechanics of futures trading and speculation are considered. Students are given the opportunity to observe and participate in futures market transactions.

ABE381 - Agricultural Seminar 381-1 to 4 (1,1,1,1) Agricultural Seminar. Discussion of special topics and/or problems in the field of agribusiness economics. Restricted to junior standing. Special approval needed from the department.

ABE388 - International Studies 388-1 to 16 (1 to 8 per semester) International Studies. Course work undertaken as a part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Special approval needed from the major department or program.

ABE390 - Special Studies in ABE 390-1 to 6 Special Studies in Agribusiness Economics. Assignments involving research and individual problems. Field trips. Special approval needed from the chair.

ABE391 - Honors in Agribusiness Econ 391-1 to 4 Honors in Agribusiness Economics. Completion of honors paper or comparable project under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Restricted to junior standing, GPA 3.0 with a 3.25 in major. Special approval needed from a staff member, department chair.

ABE401 - Agricultural Law 401-3 Agricultural Law. Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation, and other problems involving agriculture. Restricted to junior standing or consent of instructor.

ABE402 - Problems in Agribusiness Econ 402-1 to 6 Problems in Agribusiness Economics. Designed to improve the techniques of agribusiness economics workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. Special approval needed from the chair.

ABE405 - Mgmt of Ethanol Facilities 405-3 Management of Ethanol Production Facilities. This course is offered in cooperation with the National Corn-to-Ethanol Laboratory and provides a comprehensive introduction to the management and operation of an ethanol facility as well as overview of today's biofuels industry. Topics include: ethanol industry trends and bio-fuels future, corn-to-ethanol production processes, operations control and management, products and co-products, and environmental topics.

ABE419 - Entrepreneurship Agribusiness 419-3 Entrepreneurship in Agribusiness. Students will understand the importance of entrepreneurs to the food, agriculture, and rural economies; learn characteristics common to successful entrepreneurs; prepare a business plan; use information resources to support a business plan; and become proficient in developing professional reports using information technology software. Prerequisite: ABE 350 or 351 or 360.

ABE440 - Natural Environ Res Econ Plcy 440-3 Natural and Environmental Resource Economics and Policy. Students will study the application of socioeconomic principles to problems related to natural and environmental resources. The course covers the policy context within which policies related to natural and environmental resources are developed and implemented as well as the range of policy tools available for addressing environmental/natural resource problems. The institutional setting for dealing with natural and environmental resources is presented along with the role of property rights and entitlements. Contemporary resource problems are used as examples. Prerequisite: six hours of agribusiness economics, economics, or geography; graduate status; or consent of instructor.

ABE442 - Energy Econ and Policy 442-3 Energy Economics and Policy. Economics principles and methods are used to examine economic and policy issues relevant to energy production and use. Topics

include: key aspects of energy supply, demand, markets, and regulation; environmental externalities of fuel production and use; the relationships among energy use, economic growth and the environment; alternative energy sources. Prerequisite: 6 hours of agribusiness or general economics, geography, or consent of instructor.

ABE444 - Agricultural Development 444-3 Agricultural Development. (Same as ABE 544) Students are introduced to economic growth and development theory at an intermediate level. Topics include trends in development in North America and study of theories. The economic theories covered address how growth occurs in developed economies including classical and neoclassical, central place and endogenous growth theories among others. Prerequisite: 6 hours of agribusiness or general economics, geography, or consent of instructor.

ABE445 - Methods Regional Econ Analysis 445-3 Methods of Regional Economic Analysis. (Same as ABE 545) Students are introduced to regional economic methods at an intermediate level. Students will learn concepts and tools commonly used in regional and community economic analysis. Students will learn to use regional input-output analysis and more technical regional economic models designed to capture spatial economic variables. Prerequisite: ABE 444 or consent of instructor.

ABE450 - Advanced Farm Management 450-3 Advanced Farm Management. Application of production economic principles and modern decision-making techniques to farm management problems. The importance of information, sources of agricultural risk and management of risk in farm planning will be integrated. Prerequisite: ABE 350 or equivalent and University Core Curriculum mathematics required.

ABE451 - Appraisal of Rural Property 451-3 Appraisal of Rural Property. Principles and practices of rural and farm appraisal. Applications of sales comparison, income capitalization and cost approaches for estimating market value. Consequences of environmental liabilities and regulations on appraisal practices. Understanding of special valuation methods for buildings, insurance, assessments, loans and condemnations. Prerequisite: ABE 350 or consent of instructor. Field trips not to exceed \$10.

ABE452 - Advanced Ag Financial Mgmt 452-Advanced Agricultural Financial Management. Focus is on using the financial accounting system recommended by the Farm Financial Standards Council as a base for evaluating the financial performance of farms and agribusinesses. Ratio analysis and DuPont modeling emphasized. Additional focus on credit markets serving farms and agribusinesses with an emphasis on the Farm Credit System and its affiliated Agricultural Credit Associations. Prerequisite: ABE 351.

ABE453 - Agribusiness Planning Technqs 453-3 Agribusiness Planning Techniques. Application of mathematical programming to agribusiness and farm planning, including enterprise selection, resource allocation, least cost ration formulation, decision making under risk and uncertainty, transportation and location problems. Emphasis placed on modeling problems and interpretation of results. Restricted to junior standing or consent of instructor.

ABE460 - Ag Price Analysis & Forecstng 460-3 Agricultural Price Analysis and Forecasting. The focus is on the measurement and interpretation of factors affecting agricultural prices. Methods to analyze the seasonal, cyclical, and trend components of commodity prices are presented. Formal forecasting techniques, including an introduction to statistical and regression methods, are used and explained. Emphasis is placed on the presentation, communication, and evaluation of forecasts in a business environment. Students are given an opportunity to perform applied price analysis and present the results. Prerequisite: ABE 318, 362 or equivalent.

ABE461 - Agribusiness Management 461-3 Agriculture Business Management. Examination of agribusiness firm management with emphasis on the management and control of financial resources and the interrelationship between the agribusiness firm and human resource management. Other topics in agribusiness will include effective communication in the management process, business ethics, and workable credit programs for customers. Prerequisite: ABE 351 and 360 or equivalent.

ABE462 - Advncd Agriculture Marketing 462-3 Advanced Agricultural Marketing. Advanced treatment of marketing issues from both theoretical and practical decision-making perspectives. Marketing margins, intertemporal, and spatial price relationships are reviewed in detail. Historical and current grain and livestock price series are utilized in decision-making exercises. Prerequisite: ABE 362 or equivalent.

ABE463 - Managerial Strategies Agbus 463-3 Managerial Strategies for Agribusiness. Application of Industrial Organization and Strategic Management (Competitive Strategy) principles to address economic and managerial issues related to agriculture and food industries. Particular emphasis on applying those principles to explain structural changes taking place in the agriculture and food supply chain in the United States. Prerequisite: ABE 204, 350 or 360, ECON 240.

ABE470 - Interdsp Apprs Environ Issues 470-3 Interdisciplinary Approaches to Environmental Issues. Application of concepts from the biological, physical and social sciences, economics, humanities and law, used to understand the interdisciplinary complexities of environmental issues. Students will develop and demonstrate problem-solving skills as part of a team analyzing a regional environmental issue. Team-taught seminar style discussions. Prerequisite: PLB 301I and admission to Environmental Studies minor program.

ABE471 - Resource Allocation 471-3 Resource Allocation in the Agribusiness Firm. An examination of resource allocation in the agribusiness firm. Production decisions, agricultural product price analysis and decision making models are considered. Student cannot receive credit for ABE 471 if credit has been received for ABE 571. Prerequisite: six hours of agricultural economics or economics. Special approval needed from the instructor.

ABE472 - Problems and Policies 472-3 Problems and Policies of the Agricultural Sector. An analytical survey of agricultural policy issues including agricultural price and income stabilization; international trade, capital and credit, the structure of agriculture and the quality of life in rural areas. Student cannot receive credit for ABE 472 if credit has been received for ABE 572. Prerequisite: six hours of agricultural economics or economics or instructor approval.

ABE500 - Research Methodology 500-3 Agribusiness Economics Research Methodology. Research methodology as used in agriculture, including research problem definition, hypothesis formation, research design specification and development of research proposals. Both survey methodology and applied techniques, i.e. multiple regression and time series models, for developing and evaluating agricultural economic models are investigated.

ABE502 - Environmental Decision Making 502-3 Environmental Decision Making. (Same as ERP 502) The objective of the course is twofold. The first part of the class will be devoted to case studies of environmental decision making which use a variety of approaches to environmental policy. Topics to be covered include market-based environmental management versus regulatory approaches, climate change, conservation and floodplain management policy. The second part of the class will focus on the challenges of interdisciplinary communication and collaboration, methodological research issues and the role of integrated modeling. We will consider different issues such as qualitative and quantitative evidence, validation, and the role of values and objectivity in the scientific process.

ABE544 - Agricultural Development 544-3 Agricultural Development. (Same as ABE 444) Students are introduced to economic growth and development theory at an intermediate level. Topics include trends in development in North America and study of theories. The economic theories covered address how growth occurs in developed economies including classical and neoclassical, central place and endogenous growth theories among others. Prerequisites: 6 hours of agribusiness or general economics, geography, or consent of instructor.

ABE545 - Methods Regional Econ Analysis 545-3 Methods of Regional Economic Analysis. (Same as ABE 445) Students are introduced to regional economic methods at an intermediate level. Students will learn concepts and tools commonly used in regional and community economic analysis. Students will learn to use regional input-output analysis and more technical regional economic models designed to capture spatial economic variables. Prerequisite: ABE 444 or consent of instructor.

ABE571 - Resource Allocation 571-3 Resource Allocation in the Agribusiness Firm. An examination of resource allocation in the agribusiness firm. Production decisions, agricultural product price analysis and decision making models are considered. Student cannot receive credit for ABE 571 if credit has been received for ABE 471. Prerequisite: six hours of agricultural economics or economics. Special approval needed from the instructor.

ABE572 - Problems and Policies 572-3 Problems and Policies of the Agricultural Sector. An analytical survey of agricultural policy issues including agricultural price and income stabilization; international

trade, capital and credit, the structure of agriculture and the quality of life in rural areas. Student cannot receive credit for ABE 572 if credit has been received for ABE 472. Prerequisite: six hours of agricultural economics or economics. Special approval needed from the instructor.

ABE581 - Seminar-Agribusiness 581-1 to 4 Seminar in Agribusiness Economics. Seminar on current research and issues in agribusiness economics on topics such as farm management, farm policy, agricultural marketing, farm finance, agricultural prices and international agriculture.

ABE585 - Practicum/Internship 585-1 to 6 Practicum/Internship. Supervised work experience at the graduate level with a public or private agency or firm through which a graduate student can acquire practical professional training to complement their academic course work and research.

ABE588 - International Grad Studies 588-1 to 8 International Graduate Studies. University residential graduate study program abroad. Prior approval by the department is required both for the nature of program and the number of semester hours of credit.

ABE590 - Readings 590-1 to 4 Readings. Readings in specialized topics under the direction of an approved graduate faculty member. Graded S/U only.

ABE591 - Experiential Learning 591-3 Experiential Learning. A research/teaching experiential learning course designed to allow the student to gain practical research development, classroom management and/or mentoring experience under the guidance of an assigned faculty member. A typical experience may include such activities as assisting a faculty member with class project design and management, assisting in research proposal development, or participating as a mentor in the College of Agricultural Sciences 121 (Ideas to Investigation) initiative.

ABE593 - Individual Research 593-1 to 4 Individual Research. Directed research in selected topics under the supervision of an approved graduate faculty member. Graded S/U only.

ABE599 - Thesis 599-1 to 6 Thesis. Work in the research for and presentation of a thesis under the supervision of an approved faculty member. Graded S/U only.

ABE601 - Continuing Enrollment 601-1 (per semester) Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Agribusiness Economics Faculty

Altman, Ira, Associate Professor and Chair, Ph.D., University of Missouri-Columbia, 2005.

Asirvatham, Jebarj, Assistant Professor, Ph.D., University of Illinois, 2011; 2015.

Beaulieu, Jeffrey, Associate Professor, Emeritus, Ph.D., Iowa State University, 1984.

Beck, Roger, Professor, Emeritus, Ph.D., Pennsylvania State University, 1977.

Eberle, Phillip, Associate Professor, Emeritus, Ph.D., Iowa State University, 1983.

Harris, Kim, Associate Professor, Emeritus, Ph.D., University of Illinois, 1985.

Herr, William McD., Professor, Emeritus, Ph.D., Cornell University, 1954.

Kraft, Steven E., Professor, Emeritus, Ph.D., Cornell University, 1980.

Moon, Wanki, Professor, Ph.D., University of Florida, 1995.

Rendleman, C. Matthew, Associate Professor, Ph.D., Purdue University, 1989.

Sanders, Dwight, Professor, Ph.D., University of Illinois, 1995.

Agribusiness Economics

The need to better utilize our natural resources and protect our environment, improve our rural infrastructure, and manage the activities of food/fiber production, processing, and distribution firms in an international setting is creating career opportunities at a quickening pace.

Agribusiness Economics offers a flexible program, which, under the supervision of a faculty advisor, allows the student to pursue either a comprehensive or more specialized course of study in preparation to assume an effective professional role in our dynamic, global, economic, and social environment.

Courses in Agribusiness Economics in the traditional areas of farm management and marketing emphasize accepted techniques to improve efficiency and farm profitability. Course offerings in agribusiness management, finance, sales, marketing, and commodity futures prepare students to assume positions with a broad range of businesses that comprise the agribusiness sector; from input suppliers to farmers through merchandising and processing agricultural commodities to retail sales to consumers. Course offerings in environmental, energy, and natural resource economics, agribusiness management, rural development, food policy and agricultural law introduce the needed applied economic skills for effective decision making, complement a more specialized course of study, and provide the basis for dealing with contemporary societal problems.

The Agribusiness Economics major involves a set 22 hours of agribusiness economics core requirements as well as 15 elective hours in agribusiness economics including at least six hours at the 400-level. Students also have 15 hours of business, economics and methodology requirements, six hours of communication courses over and above the nine hours required by the University Core Curriculum, and 24 hours of electives. Students working with their faculty advisors will be able to plan an academic program tailored to their particular interests and/or career paths, e.g., Agribusiness Management and Finance; Energy and Environmental Policy; Farm Business Management; Sales and Marketing; Energy; and Pre-Law. Sample programs of study based on these and other areas of interest are available from the department. A few examples are provided in what follows; however, these are only a few of the possibilities open to students.

Technology Fee

The College of Agricultural Sciences assesses College of Agricultural Sciences undergraduate majors a technology fee of \$4.58 per credit hour up to twelve credit hours. The fee is charged Fall and Spring semesters.

Bachelor of Science Degree in Agribusiness Economics

Degree Requirements	Credit Hours
University Core Curriculum Requirements - ABE 204	41
Requirements for Major in Agribusiness Economics	55
Agribusiness Economics Core - ABE (204); ABE 318; ABE 330; ABE 340, ABE 350 or ABE 360; ABE 351; ABE 361 or ABE 362; ABE 381-1 to 4; ABE 440, ABE 442, ABE 444, ABE 450, ABE 461 or ABE 463	19
Agribusiness Economics Electives (six at 400-level)	15
Communication Requirements - CMST 221, CMST 280 or equivalent; ENGL 291, AS 314, ENGL 290, MGMT 202	6
Business, Economics, and Methodology Requirements - ACCT 220, AS 118, ECON 240, ECON 241, ABE 419 or equivalent	15
Other Electives - (at least nine at 300-level, six at 400-level)	24

Degree Requirements	Credit Hours
Total	120

In addition to the traditional major, the department participates in the University's Capstone Option. Through this program, students who graduate with an Associate in Applied Science (AAS) from a community college can earn a Bachelor of Science degree by taking 60 hours of coursework at SIU. Through this option, an individualized study plan is written for each student. While our Capstone Option is based on 70 hours, the vast majority of students transfer in 10 or more credit hours that apply to their capstone option, and their individualized program reflects only the 60 hours they must complete under the rules of the university's capstone option.

Agribusiness Economics Capstone Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	30
Requirements for Major in Agribusiness Economics	40
Agribusiness Economics Core - ABE 204; ABE 318; ABE 330; ABE 340, ABE 350 (Fall) or ABE 360 (Spring); ABE 351; ABE 361 (Fall) or ABE 362 (Spring); ABE 381-1 to 4; ABE 440, ABE 442, ABE 444, ABE 450, ABE 461 or ABE 463	22
Communication Requirements - CMST 221, CMST 280 or equivalent; ENGL 291, AS 314, ENGL 290, MGMT 202	6
Business, Economics and Methodology Requirements - ACCT 220, AS 118, ECON 240 or ECON 241, ABE 419, or equivalent	12
Total ¹	120

1 1 Students are required to take one of ABE 340, ABE 350 (Fall) or ABE 360 (Spring) 2 Students take either ABE 361 (Fall) or ABE 362 (Spring) 3 Students take either ABE 440 (Spring) ABE 444 (Fall), ABE 461 or ABE 463 (Spring) 4 MATH 108, MATH 139 or MATH 140 recommended for students with appropriate preparation 5 Students may take ABE 381 in either (Fall or Spring)

Examples of Agribusiness Economics Programs of Study for Different Career Tracks

Sales and Marketing Career

Suggested Agribusiness Economics electives:

ABE 333, ABE 360, ABE 363, ABE 453, ABE 462, ABE 401, ABE 460

Suggested College of Agricultural Sciences electives:

CSEM 200, CSEM 300

Suggested other electives (24 hours – minor in Economics):

MKTG 304, MKTG 336, MKTG 390, MKTG 435

Energy and Environmental Policy

Agribusiness Economics courses:

ABE 204, ABE 318, ABE 330, ABE 340, ABE 351, ABE 381, ABE 440 and ABE 444

Other Agribusiness courses:

ABE 401, ABE 453, ABE 463

Other suggested courses:

ACCT 230, ECON 240 and ECON 241, ECON 340 or ECON 341, ECON 408

GER 401, GER 420

POLS 325, POLS 444, POLS 445

Farm Business Management

Agribusiness Economics core courses:

ABE 204, ABE 318, ABE 330, ABE 350, ABE 351, ABE 361 or ABE 362, ABE 381, ABE 450

Other Agribusiness Economics courses:

ABE 333, ABE 340, ABE 361 or ABE 362, ABE 363, ABE 401, ABE 460, ABE 453

Other Agriculture courses students may wish to develop their technical skill in a particular production area by

selecting other agricultural courses:

AS 121, AS 122, AS 315, AS 430, AS 465, AS 485, AGRS 472, CSEM 200, CSEM 300, CSEM 419,

CSEM 468, HORT 220, HORT 333, HORT 423, HORT 432

Other Suggested Courses:

ACCT 230

Agribusiness Management & Finance

Agribusiness Economics core courses:

ABE 204, ABE 318, ABE 330, ABE 351, ABE 360, ABE 361 or ABE 362, ABE 461, ABE 381

Other Agribusiness Economics courses:

ABE 333, ABE 340, ABE 363, ABE 401, ABE 453, ABE 460, ABE 463

Other Suggested Courses:

ACCT 230, ECON 240 & ECON 241, MKTG 304, MKTG 336

Agricultural and Rural Real Estate Appraisal

Agribusiness Economics core courses:

ABE 204, ABE 318, ABE 330, ABE 350, ABE 351, ABE 361 or ABE 362, ABE 381, ABE 450

Other Agribusiness Economics courses:

ABE 333, ABE 340, ABE 361 or ABE 362, ABE 401, ABE 451, ABE 453

Other Suggested Courses:

FIN 320, FIN 321, FIN 322, FIN 323, FIN 330, CSEM 240

Agribusiness Economics Minor

A minor in agribusiness economics is offered. A minor consists of 15 semester hours of credit of which three credit hours must be at the 400-level. Twelve (12) hours must be taken at Southern Illinois University Carbondale. An advisor within the department must be consulted before selecting this field as a minor.

Agribusiness Economics Courses

ABE204 - Food, Fiber, & Nat Resources 204-3 Introductory Economics of Food, Fiber, and Natural Resources. [IAI course: AG 901] (Advanced University Core Curriculum Course) An introduction to the economics and policies underlying food and fiber production, distribution, and consumption as well as the use of environmental and natural resources.

ABE257 - Work Experience 257-1 to 10 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Special approval needed from the chair. Mandatory Pass/Fail.

ABE258 - Past Work Experience 258-1 to 30 Past Work Experience. Credit for career related employment based on the evaluation of the documentation of this experience by the Department of Agribusiness Economics. No grade for past work experience. Special approval needed from the chair.

ABE300I - Social Perspectives 300I-3 Social Perspectives on Environmental Issues. (Same as AGRI/LAC 300I) (University Core Curriculum) Case studies (e.g., rural village in developing nation; small town in the U.S.; city in developing nation) are used to learn how different societies and groups deal with their specific environmental issues, and how culture and economic factors affect their perspectives and actions.

ABE302 - Country Living Mgt & Info 302-2 Country Living Management and Information. Managing a small acreage as an avocation. Types of decision problems and sources of information.

ABE318 - Agbusiness Statistical Methods 318-3 Agribusiness Statistical Methods. Statistical methods applied to agribusiness economics, including survey design, sampling, graphic presentation of data, index numbers, statistical inference, basic linear regression and correlation.

ABE330 - Applied AgBus Economics 330-3 Principles of Agribusiness Economics: Theory and Applications. The student will enhance their understanding of and ability to apply the principles of economics to the unique problems of the agricultural sector. The course covers the theory of resource allocation with a rural emphasis. The following topics are taken up in a case study framework: production of food and fiber, the agribusiness sector and markets, rural community development, and environmental and natural resource use and conservation. The roles of governmental policy, international trade organizations, and treaties are included throughout the course. Prerequisite: ABE 204.

ABE333 - Professional Agri-selling 333-3 Professional Agri-selling. Focuses on professional Agri-selling and the sales process. Topics include different methods of selling, steps and techniques in the selling process, customer service, sales ethics, consumer behavior concepts and sales management. Critical skills of self-management, communication, and interpersonal values are examined. Opportunities of a career in Agri-selling are surveyed.

ABE340 - US/Global Food Policies 340-3 Domestic and International Food Policies. Examination of domestic and international policies that affect the production of food products. Topics will include a review of existing and former policies designed for American producers (e.g., commodity programs to support farm income, risk management and conservation of resources). Food safety policies will be examined. In addition, aspects of international trade including policies (NAFTA), practices, and institutions (WTO, World Bank, etc.) as they relate to access to foreign markets will be reviewed. Prerequisite: ABE 204 or consent of instructor.

ABE350 - Farm Management 350-3 Farm Management. Efficient organization and management of a farming operation. Emphasis on crop and livestock selection, management of farm resources, farm budgets and records analysis, and farm leases. Prerequisite: ABE 204 or one course in economics. Student will incur field trip expenses not to exceed \$5.

ABE351 - Financial Mgt in Agriculture 351-3 Financial Management in Agriculture. Analysis of the capital structure of agriculture and sources of capital. Credit analysis of agribusiness firms using financial statements, firm growth, capital budgeting, and tax considerations. Prerequisite: ABE 204 or equivalent.

ABE359 - Internship Program 359-1 to 6 Internship Program. Supervised work experience program in either an agricultural agency of the government or agribusiness. Restricted to junior standing or consent. Mandatory Pass/Fail.

ABE360 - Agribusiness Mgt & Organiztn 360-3 Agribusiness Management and Organization. Problems and practices in agribusiness operations including management practices, decision-making tools, financial analysis, economic considerations in managing land, labor and capital, and the impact of alternative organizational forms are emphasized. The focus is on applications to real world problems. Students are provided an opportunity to interact with business managers through a series of guest speakers. Prerequisite: ABE 204 or equivalent.

ABE361 - Agribusiness Marketing Mgmt 361-3 Agribusiness Marketing Management. An overview of marketing practices and strategies employed by agribusiness product and service firms. Market research, market segmentation and product mix development are among the topics reviewed. Students participate in case analysis and marketing plan development projects. Prerequisite: ABE 204 or equivalent.

ABE362 - Mktg & Pricing Ag Products 362-3 Marketing and Pricing Agricultural Products. Institutional arrangements in marketing agricultural products. Market structure, marketing costs, and alternative methods of pricing agricultural products are also examined. Prerequisite: ABE 204 or equivalent.

ABE363 - Commodity Price Risk Mgt 363-3 Commodity Price Risk Management. The focus is on the use of financial instruments, including futures and options, to manage price risk in modern agribusiness. Topics covered include: commodity futures and options, cash forward and other over-the-counter contracts, hedging, spreading, basis risk and basis trading. Applications and examples are provided for commodity producers, end-users, and the processors. The mechanics of futures trading and speculation are considered. Students are given the opportunity to observe and participate in futures market transactions.

ABE381 - Agricultural Seminar 381-1 to 4 (1,1,1,1) Agricultural Seminar. Discussion of special topics and/or problems in the field of agribusiness economics. Restricted to junior standing. Special approval needed from the department.

ABE388 - International Studies 388-1 to 16 (1 to 8 per semester) International Studies. Course work undertaken as a part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Special approval needed from the major department or program.

ABE390 - Special Studies in ABE 390-1 to 6 Special Studies in Agribusiness Economics. Assignments involving research and individual problems. Field trips. Special approval needed from the chair.

ABE391 - Honors in Agribusiness Econ 391-1 to 4 Honors in Agribusiness Economics. Completion of honors paper or comparable project under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Restricted to junior standing, GPA 3.0 with a 3.25 in major. Special approval needed from a staff member, department chair.

ABE401 - Agricultural Law 401-3 Agricultural Law. Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation, and other problems involving agriculture. Restricted to junior standing or consent of instructor.

ABE402 - Problems in Agribusiness Econ 402-1 to 6 Problems in Agribusiness Economics. Designed to improve the techniques of agribusiness economics workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. Special approval needed from the chair.

ABE405 - Mgmt of Ethanol Facilities 405-3 Management of Ethanol Production Facilities. This course is offered in cooperation with the National Corn-to-Ethanol Laboratory and provides a comprehensive introduction to the management and operation of an ethanol facility as well as overview of today's biofuels industry. Topics include: ethanol industry trends and bio-fuels future, corn-to-ethanol production processes, operations control and management, products and co-products, and environmental topics.

ABE419 - Entrepreneurship Agribusiness 419-3 Entrepreneurship in Agribusiness. Students will understand the importance of entrepreneurs to the food, agriculture, and rural economies; learn

characteristics common to successful entrepreneurs; prepare a business plan; use information resources to support a business plan; and become proficient in developing professional reports using information technology software. Prerequisite: ABE 350 or 351 or 360.

ABE440 - Natural Environ Res Econ Plcy 440-3 Natural and Environmental Resource Economics and Policy. Students will study the application of socioeconomic principles to problems related to natural and environmental resources. The course covers the policy context within which policies related to natural and environmental resources are developed and implemented as well as the range of policy tools available for addressing environmental/natural resource problems. The institutional setting for dealing with natural and environmental resources is presented along with the role of property rights and entitlements. Contemporary resource problems are used as examples. Prerequisite: six hours of agribusiness economics, economics, or geography; graduate status; or consent of instructor.

ABE442 - Energy Econ and Policy 442-3 Energy Economics and Policy. Economics principles and methods are used to examine economic and policy issues relevant to energy production and use. Topics include: key aspects of energy supply, demand, markets, and regulation; environmental externalities of fuel production and use; the relationships among energy use, economic growth and the environment; alternative energy sources. Prerequisite: 6 hours of agribusiness or general economics, geography, or consent of instructor.

ABE444 - Agricultural Development 444-3 Agricultural Development. (Same as ABE 544) Students are introduced to economic growth and development theory at an intermediate level. Topics include trends in development in North America and study of theories. The economic theories covered address how growth occurs in developed economies including classical and neoclassical, central place and endogenous growth theories among others. Prerequisite: 6 hours of agribusiness or general economics, geography, or consent of instructor.

ABE445 - Methods Regional Econ Analysis 445-3 Methods of Regional Economic Analysis. (Same as ABE 545) Students are introduced to regional economic methods at an intermediate level. Students will learn concepts and tools commonly used in regional and community economic analysis. Students will learn to use regional input-output analysis and more technical regional economic models designed to capture spatial economic variables. Prerequisite: ABE 444 or consent of instructor.

ABE450 - Advanced Farm Management 450-3 Advanced Farm Management. Application of production economic principles and modern decision-making techniques to farm management problems. The importance of information, sources of agricultural risk and management of risk in farm planning will be integrated. Prerequisite: ABE 350 or equivalent and University Core Curriculum mathematics required.

ABE451 - Appraisal of Rural Property 451-3 Appraisal of Rural Property. Principles and practices of rural and farm appraisal. Applications of sales comparison, income capitalization and cost approaches for estimating market value. Consequences of environmental liabilities and regulations on appraisal practices. Understanding of special valuation methods for buildings, insurance, assessments, loans and condemnations. Prerequisite: ABE 350 or consent of instructor. Field trips not to exceed \$10.

ABE452 - Advanced Ag Financial Mgmt 452-Advanced Agricultural Financial Management. Focus is on using the financial accounting system recommended by the Farm Financial Standards Council as a base for evaluating the financial performance of farms and agribusinesses. Ratio analysis and DuPont modeling emphasized. Additional focus on credit markets serving farms and agribusinesses with an emphasis on the Farm Credit System and its affiliated Agricultural Credit Associations. Prerequisite: ABE 351.

ABE453 - Agribusiness Planning Technqs 453-3 Agribusiness Planning Techniques. Application of mathematical programming to agribusiness and farm planning, including enterprise selection, resource allocation, least cost ration formulation, decision making under risk and uncertainty, transportation and location problems. Emphasis placed on modeling problems and interpretation of results. Restricted to junior standing or consent of instructor.

ABE460 - Ag Price Analysis & Forecstng 460-3 Agricultural Price Analysis and Forecasting. The focus is on the measurement and interpretation of factors affecting agricultural prices. Methods to analyze the seasonal, cyclical, and trend components of commodity prices are presented. Formal forecasting techniques, including an introduction to statistical and regression methods, are used and explained.

Emphasis is placed on the presentation, communication, and evaluation of forecasts in a business environment. Students are given an opportunity to perform applied price analysis and present the results. Prerequisite: ABE 318, 362 or equivalent.

ABE461 - Agribusiness Management 461-3 Agriculture Business Management. Examination of agribusiness firm management with emphasis on the management and control of financial resources and the interrelationship between the agribusiness firm and human resource management. Other topics in agribusiness will include effective communication in the management process, business ethics, and workable credit programs for customers. Prerequisite: ABE 351 and 360 or equivalent.

ABE462 - Advncd Agriculture Marketing 462-3 Advanced Agricultural Marketing. Advanced treatment of marketing issues from both theoretical and practical decision-making perspectives. Marketing margins, intertemporal, and spatial price relationships are reviewed in detail. Historical and current grain and livestock price series are utilized in decision-making exercises. Prerequisite: ABE 362 or equivalent.

ABE463 - Managerial Strategies Agbus 463-3 Managerial Strategies for Agribusiness. Application of Industrial Organization and Strategic Management (Competitive Strategy) principles to address economic and managerial issues related to agriculture and food industries. Particular emphasis on applying those principles to explain structural changes taking place in the agriculture and food supply chain in the United States. Prerequisite: ABE 204, 350 or 360, ECON 240.

ABE470 - Interdsp Apprs Environ Issues 470-3 Interdisciplinary Approaches to Environmental Issues. Application of concepts from the biological, physical and social sciences, economics, humanities and law, used to understand the interdisciplinary complexities of environmental issues. Students will develop and demonstrate problem-solving skills as part of a team analyzing a regional environmental issue. Team-taught seminar style discussions. Prerequisite: PLB 301I and admission to Environmental Studies minor program.

ABE471 - Resource Allocation 471-3 Resource Allocation in the Agribusiness Firm. An examination of resource allocation in the agribusiness firm. Production decisions, agricultural product price analysis and decision making models are considered. Student cannot receive credit for ABE 471 if credit has been received for ABE 571. Prerequisite: six hours of agricultural economics or economics. Special approval needed from the instructor.

ABE472 - Problems and Policies 472-3 Problems and Policies of the Agricultural Sector. An analytical survey of agricultural policy issues including agricultural price and income stabilization; international trade, capital and credit, the structure of agriculture and the quality of life in rural areas. Student cannot receive credit for ABE 472 if credit has been received for ABE 572. Prerequisite: six hours of agricultural economics or economics or instructor approval.

ABE500 - Research Methodology 500-3 Agribusiness Economics Research Methodology. Research methodology as used in agriculture, including research problem definition, hypothesis formation, research design specification and development of research proposals. Both survey methodology and applied techniques, i.e. multiple regression and time series models, for developing and evaluating agricultural economic models are investigated.

ABE502 - Environmental Decision Making 502-3 Environmental Decision Making. (Same as ERP 502) The objective of the course is twofold. The first part of the class will be devoted to case studies of environmental decision making which use a variety of approaches to environmental policy. Topics to be covered include market-based environmental management versus regulatory approaches, climate change, conservation and floodplain management policy. The second part of the class will focus on the challenges of interdisciplinary communication and collaboration, methodological research issues and the role of integrated modeling. We will consider different issues such as qualitative and quantitative evidence, validation, and the role of values and objectivity in the scientific process.

ABE544 - Agricultural Development 544-3 Agricultural Development. (Same as ABE 444) Students are introduced to economic growth and development theory at an intermediate level. Topics include trends in development in North America and study of theories. The economic theories covered address how growth occurs in developed economies including classical and neoclassical, central place and endogenous

growth theories among others. Prerequisites: 6 hours of agribusiness or general economics, geography, or consent of instructor.

ABE545 - Methods Regional Econ Analysis 545-3 Methods of Regional Economic Analysis. (Same as ABE 445) Students are introduced to regional economic methods at an intermediate level. Students will learn concepts and tools commonly used in regional and community economic analysis. Students will learn to use regional input-output analysis and more technical regional economic models designed to capture spatial economic variables. Prerequisite: ABE 444 or consent of instructor.

ABE571 - Resource Allocation 571-3 Resource Allocation in the Agribusiness Firm. An examination of resource allocation in the agribusiness firm. Production decisions, agricultural product price analysis and decision making models are considered. Student cannot receive credit for ABE 571 if credit has been received for ABE 471. Prerequisite: six hours of agricultural economics or economics. Special approval needed from the instructor.

ABE572 - Problems and Policies 572-3 Problems and Policies of the Agricultural Sector. An analytical survey of agricultural policy issues including agricultural price and income stabilization; international trade, capital and credit, the structure of agriculture and the quality of life in rural areas. Student cannot receive credit for ABE 572 if credit has been received for ABE 472. Prerequisite: six hours of agricultural economics or economics. Special approval needed from the instructor.

ABE581 - Seminar-Agribusiness 581-1 to 4 Seminar in Agribusiness Economics. Seminar on current research and issues in agribusiness economics on topics such as farm management, farm policy, agricultural marketing, farm finance, agricultural prices and international agriculture.

ABE585 - Practicum/Internship 585-1 to 6 Practicum/Internship. Supervised work experience at the graduate level with a public or private agency or firm through which a graduate student can acquire practical professional training to complement their academic course work and research.

ABE588 - International Grad Studies 588-1 to 8 International Graduate Studies. University residential graduate study program abroad. Prior approval by the department is required both for the nature of program and the number of semester hours of credit.

ABE590 - Readings 590-1 to 4 Readings. Readings in specialized topics under the direction of an approved graduate faculty member. Graded S/U only.

ABE591 - Experiential Learning 591-3 Experiential Learning. A research/teaching experiential learning course designed to allow the student to gain practical research development, classroom management and/or mentoring experience under the guidance of an assigned faculty member. A typical experience may include such activities as assisting a faculty member with class project design and management, assisting in research proposal development, or participating as a mentor in the College of Agricultural Sciences 121 (Ideas to Investigation) initiative.

ABE593 - Individual Research 593-1 to 4 Individual Research. Directed research in selected topics under the supervision of an approved graduate faculty member. Graded S/U only.

ABE599 - Thesis 599-1 to 6 Thesis. Work in the research for and presentation of a thesis under the supervision of an approved faculty member. Graded S/U only.

ABE601 - Continuing Enrollment 601-1 (per semester) Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Agribusiness Economics Faculty

Altman, Ira, Associate Professor and Chair, Ph.D., University of Missouri-Columbia, 2005.

Asirvatham, Jebarj, Assistant Professor, Ph.D., University of Illinois, 2011; 2015.

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Kraft, Steven E., Professor, Emeritus, Ph.D., Cornell University, 1980.
Moon, Wanki, Professor, Ph.D., University of Florida, 1995.
Rendleman, C. Matthew, Associate Professor, Ph.D., Purdue University, 1989.
Sanders, Dwight, Professor, Ph.D., University of Illinois, 1995.

Agricultural Systems and Education

The Agricultural Systems and Education major is administered through the Department of Plant, Soil and Agricultural Systems. The Agricultural Systems and Education program includes six specialized areas of study.

The primary objectives of this major are: to provide specialized academic preparation in agriculture appropriate for the specializations of the major, to provide a program for the student desiring a broad based agriculture major, optionally combined with another discipline and to provide the quality academic and professional preparation necessary for success in the various career fields of the specializations. The following statements identify typical career opportunities for persons completing the respective specialization.

Agricultural Systems Technology Management Specialization. This specialization is intended for students interested in technical management of an agricultural related business involved in production, processing or manufacturing. This specialization combines an understanding of the agricultural, biological and physical sciences with managerial and technical skills. This understanding of science, systems management and applications engineering can be used in a career in the production and processing of food, fiber, feed and fuel. Students focus on the application of engineering principles, the study of agricultural technology and integration of business management concepts in the food and agricultural industry.

Agricultural Education Specialization. This specialization is intended for those students who plan to be involved in agricultural programs as a teacher in secondary and post-secondary education, as well as in the fields of communication, extension, and industry. Students will complete course requirements for teacher licensure in secondary Agricultural Education, and can optionally complete training for teacher licensure in other majors, including biology, math, physical sciences, and social sciences.

Agricultural Production Management Specialization. This specialization provides the student with the background and preparation for careers in production based areas of agriculture including sales and service positions in the supply and marketing chain, support industries, and agribusiness as well as production management positions and farming.

General Agriculture Specialization. This program is designed to provide the student with a broad-based background in agriculture and the flexibility so that the student, in conjunction with their advisor, can design a program of study that prepares them to meet their career goals. These customized programs often include emphasis in other disciplines.

Agricultural Communications Specialization. This specialization is designed to provide the student competencies in both agriculture (animal science, horticulture, crop/soil sciences, agricultural business/economics, and agricultural engineering/technology) and communications (print/broadcast journalism, marketing/advertising, publications, journalism law and ethics) for careers within the agricultural industry, agricultural extension service, or agricultural news agencies.

Food and Process Engineering Technology Specialization. This specialization is designed for students to be able to manage and supervise operations in food processing industry as food processing technologists or managers. The students will gain a fundamental understanding of the science of food processing and preservation operations. The students will gain applied knowledge of food handling, food safety, food packaging, process automation, and operations management. Courses are designed to provide hands on experience on modern food processing industrial practices through interactive classes including labs, projects, field trips, and internships in food industry.

Qualified candidates for the Capstone Option are accepted in the major. For a number of courses taught in the major, there will be additional charges for field trips, lab manuals, or supplies.

Technology Fee

The College of Agricultural Sciences assesses College of Agricultural Sciences undergraduate majors a technology fee of \$4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semesters.

Bachelor of Science Degree in Agricultural Systems and Education, College of Agricultural Sciences

Agricultural Systems Technology Management Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include MATH 108, CHEM 106, PLB 115, UNIV 101. ¹	39
Requirements for Agricultural Systems Technology Management Specialization	
Core Requirements - AGSE 318, AGSE 371, or PHYS 203A and PHYS 253A, PHYS 361, PHYS 375, PHYS 497 or ABE 360	16
AGSE approved courses ²	18
Other required courses: ANS 121, ANS 122 or CSEM 200	3-4
ABE 204 ³	3
Approved Management Electives ⁴	40-41
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140, or MATH 150 may be substituted. CHEM 140A, CHEM 200 and CHEM 201 may be substituted. PLB 200 may be substituted Any UNIV 101 may be substituted

2 Choose from AGSE 372, AGSE 374, AGSE 402B, AGSE 461, AGSE 463, AGSE 472, AGSE 473, AGSE 476, AGSE 483, AGSE 488, AGSE 489, AGSE 495. AGSE and Approved Electives must equal at least 42 credit hours at the 300-level or 400-level

3 May be taken as University Core Requirement

4 May be taken as University Core Requirement Choose any from ABE 318, ABE 333, ABE 351, ABE 360, ABE 361, ABE 362, ABE 363, ABE 451, ABE 452, ACCT 210, MGMT 208, MGMT 304, MGMT 318, MGMT 352

Agricultural Education Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include EA 102 or HIST 101A or HIST 101B, MATH 108, CHEM 106, PLB 115, PSYC 102, EDUC 211, EDUC 214, UNIV 101I ¹	39

Degree Requirements	Credit Hours
Agricultural Education Specialization Requirements	
Core Requirements: - AGSE 110, AGSE 170, AGSE 311A, AGSE 311B, AGSE 314, AGSE 318	19
Other required courses:	
AGRI 323	3
ANS 121, ANS 122	4
CSEM 200 or HORT 200	3-4
PLB 200 ²	4
ABE 204	3
Education EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, EDUC 401, CI 360 ³	27
Agriculture Electives ⁴	12-13
Electives	5
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted. CHEM 140A, CHEM 200 and CHEM 201 may be substituted. Plant Biology 200 may be substituted. Any UNIV 101 may be substituted.

2 May be taken as University Core Requirement.

3 Admittance into the Teacher Education Program required

4 Choose any from ABE, AGRI, AGSE, ANS, CSEM, HORT, HTA, HND, FOR

Agricultural Production Management Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include MATH 108, CHEM 140A, PLB 200, UNIV 101 ¹	39+2
Requirements for Agricultural Production Management Specialization	
Core Requirements: AGSE 318, AGSE 371, AGSE 375	10
AGSE approved courses ²	18
Other required courses:	

Degree Requirements	Credit Hours
ANS 121, ANS 122	4
CSEM 200	3
ABE 204 ³	3
Emphasis area ⁴	6
Agriculture Electives ⁵	22
Electives ⁶	13
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140, or MATH 150 may be substituted. CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted

2 Choose from ABE, AGRI, AGSE, CSEM, HORT, HTA, HND, FOR.

3 May be taken as University Core Requirement

4 Select six credit hours from 1) ABE 350 or ABE 351 and ABE: 300- or 400-level; 2) AGSE 461, AGSE 472, AGSE 473, AGSE 483, AGSE 488, AGSE 489, AGSE 495 or AGSE 497; 3) ANS 315 or ANS 331 and ANS 409, ANS 430, ANS 465, ANS 485; 4) CSEM 240 and CSEM 300

5 Choose any from ABE, AGRI, AGSE, ANS, CSEM, HORT, HTA, HND, FOR. Overall program must have 42 credit hours at the 300- or 400-level

6 Overall program must have 42 credit hours at the 300- or 400-level

Agricultural Communications Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include PYSC 102, ABE 204, MATH 108, CHEM 106, PLB 115, UNIV 101L. ¹	39
Agricultural Communications Specialization Requirements	
Core Requirements: AGSE 170, AGSE 180, AGSE 318, AGSE 359, AGSE 411	16
Other required courses:	
ANS 121, ANS 122	4
CSEM 200	3
AGRI 323	2
Major-related Electives ²	24

Degree Requirements	Credit Hours
Communication Electives ³	25
Electives ⁴	5
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140, or MATH 150 may be substituted. CHEM 140A, CHEM 200 and CHEM 201 may be substituted. PLB 200 may be substituted. Any UNIV 101 may be substituted.

2 Choose from ABE, AGRI, ANS, CSEM, HORT, HTA, HND, FOR, MKTG, GEOG, JRNL, RTD, CMST Electives should be chosen so that the overall program has at least 42 credit hours at the 300- or 400-level

3 Electives should be chosen so that the overall program has at least 42 credit hours at the 300- or 400-level. Choose from any 300- or 400-level CMST, JRNL, MKTG, RTD

4 Electives should be chosen so that the overall program has at least 42 credit hours at the 300- or 400-level

General Agriculture Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include MATH 108, CHEM 106, PLB 115 or ZOOL 115, UNIV 101I ¹	39
General Agriculture Specialization Requirements	
Core Requirements: AGSE 170 or AGSE 371, AGSE 314, AGSE 318, AGSE 375	16
Other required courses:	
ANS 121, ANS 122	4
CSEM 200	3
ABE 204 ²	3
AGRI 323	2
ANS Elective ³	3
ABE Elective ⁴	3
CSEM Elective ⁵	3
Agriculture Minor Elective ⁶	11-15

Degree Requirements	Credit Hours
Electives ⁷	29-33
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140, or MATH 150 may be substituted. CHEM 140A, CHEM 200 and CHEM 201 may be substituted. PLB 200 may be substituted. Any UNIV 101 may be substituted.

2 May be taken as University Core Curriculum requirement

3 Electives should be chosen so that the overall program has at least 42 credit hours at the 300- or 400-level

4 Electives should be chosen so that the overall program has at least 42 credit hours at the 300- or 400-level

5 Electives should be chosen so that the overall program has at least 42 credit hours at the 300- or 400-level

6 Electives should be chosen so that the overall program has at least 42 credit hours at the 300- or 400-level Choose from ABE, AGRI, AGSE, ANS, CSEM, HORT, HTA, HND, FOR to complete a minor

7 Electives should be chosen so that the overall program has at least 42 credit hours at the 300- or 400-level

Food and Process Engineering Technology Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include MATH 108 or MATH 125; CHEM 140A, BIOL 211, and UNIV 101I. ¹	41
Food and Process Engineering Technology Specialization Requirements	
Agricultural Systems Core Classes - AGSE 361, AGSE 374, AGSE 375, AGSE 473, AGSE 483, AGSE 488, AGSE 489, AGSE 495, AGSE 497	27
Required Science Courses	20
BIOL 211, BIOL 213 ²	(3)+5
CHEM 140A, CHEM 140B ³	(3)+5
MICR 201	4
PHSY 203A, PHSY 203B	6
Other Required Courses	20
AGSE 318 or CS 105	3
AGSE 431	3
ABE 318	3

Degree Requirements	Credit Hours
ACCT 210	3
IMAE 475	3
MATH 109	3
Approved Business/Agribusiness and Industrial Management Electives	14
Total	120

1 UNIV 101I Required for first semester students

2 Hours in parenthesis substitute into the University Core Curriculum.

3 Hours in parenthesis substitute into the University Core Curriculum.

Minor in Agricultural Systems

A minor in Agricultural Systems is offered. A minor consists of 15 semester hours of credit. Normally 12 hours must be taken at Southern Illinois University Carbondale. An advisor within the department must be consulted before selecting this field as a minor.

Minor in Agricultural Education

A minor in Agricultural Education is offered. A minor consists of 15 semester hours of credit. Normally 12 of the 15 hours must be taken at Southern Illinois University Carbondale. An advisor within the department must be consulted before selecting this field as a minor. Note, that the minor in Agricultural Education does not qualify the holder to an Illinois teaching license.

Food and Process Engineering Technology Minor

Requirements: A minor in Food and Process Engineering Technology is available to those students who are interested in the food and processing industry. A total of 15 hours of credit, from the list below, is required: AGSE 375; AGSE 361; AGSE 483; AGSE 488; or AGSE 495

Agricultural Systems and Education Courses

AGSE110 - Intro to Ag Education 110-3 Introduction to Agricultural Education. [IAI Course: AG 911]

An entry level course introducing the philosophies of education and career and technical education, including: the history of and current issues in agricultural education; the nature of the educational process; the characteristics, duties and responsibilities of successful teachers; the components of an agricultural education program; the role of professional organizations in agricultural education; and state teacher certification requirements.

AGSE170 - Intro to Ag Technologies 170-4 Introduction to Agricultural Technologies. [IAI Course: AG 906] An introduction to agricultural technologies related to soil and water systems, power and machinery, electricity and electronics, structures, environment and handling of agricultural materials. Lab fee: \$20.

AGSE180 - Intro to Ag Communications 180-3 Introduction to Agricultural Communications. Introduction to the uses of mass communications media and theories in agricultural communications, and to professional opportunities in applied communications in agricultural organizations.

AGSE257 - Work Experience 257-1 to 10 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Financial Aid Office. Special approval needed from the chair. Mandatory Pass/Fail.

AGSE258 - Past Work Experience 258-1 to 10 Past Work Experience. Credit for career related employment based on the evaluation of the documentation of this experience by the Department of Agricultural Systems and Education. No grade for past work experience. Special approval needed from the department.

AGSE311A - Ag Education Programs 311A-3 Agricultural Education Programs. Designed to improve the techniques related to award programs and application processes of agricultural education specialists through discussion, application, organization, and assignment to problems in the field of agricultural education Career Development Event programs in the Illinois and National FFA programs. Emphasis will be placed on conceptual understanding, planning, instruction, and application of FFA and Agriculture Education Career Development Events. Prerequisite: AGSE 110 Introduction to Agricultural Education with a grade of C or consent of instructor.

AGSE311B - Ag Educ Classroom Methodology 311B-3 Agricultural Education Classroom Methodology. Nature and scope of the different teaching methodologies involved in classroom and laboratory instruction in the high school agricultural education classroom. Emphasis focuses on the development, implementation, application, and reflective practices for lesson development and improvement related to classroom and laboratory teaching methods. Prerequisite: AGSE 110 Introduction to Agricultural Education with a grade of C or consent of instructor.

AGSE314 - Ag Information Programs 314-3 Agricultural Information Programs. Preparation for an agricultural information internship; an in-depth study into the nature, scope, integral parts, and methods of a total agricultural information program.

AGSE318 - Computers in Agriculture 318-3 Computers in Agriculture. [IAI Course: AG 913] about the use and role of computers in agriculture. The major thrust includes an understanding and application of micro-computers in agriculture with special emphasis on how to save time, money, and increase efficiency in agriculture. This course includes advanced problem-solving and data management content.

AGSE359 - Internship Program 359-1 to 6 Intern Program. Supervised work experience in either an agricultural agency of the government or agribusiness. Restricted to junior standing or consent of instructor. Mandatory Pass/Fail.

AGSE361 - Intro to Control Programming 361-3 Introduction to Control Programming. Entry-level course in the logic and procedures of computer programming for control and monitoring of electronically controlled equipment and systems in agriculture. Topics include problem solving strategies, software design concepts, control logic, and algorithm development and troubleshooting. The laboratory setting provides hands-on experience in programming electronic devices with immediate visual feedback. Laboratory fee: \$10.

AGSE364 - Ag Leadership 364-1 to 6 Agricultural Leadership Development. Credit is given for one year of service as a sectional or state FFA officer. Special approval is needed from the department and is dependent on successful completion and evaluation provided by the Illinois State FFA Office.

AGSE370 - Power Equipment 370-2 Consumer and Commercial Power Equipment. The primary focus of this course is to achieve an understanding of small engines. ATV's and power equipment (including chain saws, generators, mowers and turf equipment) and focus on their features, benefits, maintenance and repair.

AGSE371 - Physics in Agriculture 371-4 Physics in Agriculture. An introduction to physical principles as they apply to agriculture. These principle topical areas include mechanics, measurement, electricity, thermodynamics, hydraulics, material properties, and fluids. Prerequisite: MATH 108 or MATH 125, or concurrent enrollment.

AGSE372 - Ag Machinery Systems Mgmt 372-3 Agricultural Machinery Systems Management. A machinery management course focusing on the principles and measurement of engine power and the selection, operation, maintenance and analysis of power and machinery systems for optimum performance and efficiency. The problem solving process is emphasized. Prerequisite: AGSE 371. Fee: \$20.

AGSE374 - Applied Graphics 374-3 Applied Graphics. Fundamentals of interpreting graphic illustrations, sketching, drawing, and lettering in agriculture, forestry and landscape design. Application of computers in the creation and interpretation of graphics will be emphasized.

AGSE375 - Intro to Ag Systems 375-3 Introduction to Agricultural Systems. Operational functions and processes that are integrated to accomplish a designated, well-defined purpose in production and processing. Topics include planning and evaluating reliability, manpower, scheduling, economy, packaging, human and animal factors. Prerequisites: AGSE 318, 371. Lab fee: \$10.

AGSE380 - Seminar: Ag Communications 380-1 to 2 (1,1) Agricultural Communications Seminar. Readings, discussions, and activities related to (a) current problems, issues, and practices in agricultural communication, (b) career opportunities, professional development, and ethical standards in agricultural communication. Restricted to junior standing.

AGSE381 - Professional Placement 381-1 Agricultural Systems Professional Placement. Professional ethics, protocols, and certifications within agricultural systems. Resume development, employment searches, and technical interviewing. Opportunities within ASABE (American Society of Agricultural and Biological Engineers). Restricted to junior standing or consent of instructor.

AGSE384 - Ag Construction Processes 384-3 Agricultural Construction Processes. Students will apply computer and hands-on techniques to different agricultural construction processes. The computer techniques will address construction challenges such as budget, deadlines, and limited resources. Safety, tool and equipment principles will be applied while completing specific agricultural construction projects. Lab fee: \$25.

AGSE388 - International Studies 388-1 to 16 (1 to 8 per semester) International Studies. Course work undertaken as part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Special approval needed from the major department or program.

AGSE390 - Special Studies in Ag Systems 390-1 to 4 Special Studies in Agricultural Systems. Assignments involving research and individual problems. Field trips. Special approval needed from the department.

AGSE391 - Honors in Ag Systems 391-1 to 4 Honors in Agricultural Systems. Completion of honors paper and comparable project within one of the specializations, under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Special approval needed from the department.

AGSE402A - Problems Ag Education 402A-3 Problems in Agricultural Education. (Same as PSAS 402A) Designed to improve the techniques related to award programs and application processes of agricultural education specialists through discussion, application, organization, and assignment to problems in the field of agricultural education. Emphasis will be placed on conceptual understanding of FFA and Agriculture Education award programs, applications, Supervised Agricultural Experience Program, and National Chapter Award Program, affiliated professional partnerships, and external sources for developing the entire Agricultural Education program. Prerequisite: AGSE 110 Introduction to Agricultural Education with a grade of B or better.

AGSE402B - Problems Ag Technologies 402B-1 to 6 Problems in Agricultural Technologies. (Same as PSAS 402B) Designed to improve the techniques of agricultural mechanization workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. Not for graduate credit. Special approval needed from the department.

AGSE411 - Ag Journal 411-3 SIUC Ag Journal. (Same as PSAS 411) Coordinated approach to the planning, writing, layout and publishing of a journal on agriculture and education in the SIUC College of Agricultural Sciences. Special approval needed from the department.

AGSE412 - Methods:Ag Mechanization 412-3 Methods of Agriculture Mechanization. (Same as PSAS 412) Theory and use of educational materials and devices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories. There is a \$15 laboratory fee for this course.

AGSE414 - Adult Ed Procds, Methods, Tech 414-3 Adult and Adolescent Education Procedures, Methods, and Techniques. (Same as PSAS 414) Determining adult and adolescent education needs and interests of the school and community. Securing and organizing the information needed for adult and adolescent education programs and planning teaching activities. This course will be taken concurrently with EDUC 401A. Prerequisite: AGSE 110 with a grade of B or better.

AGSE415 - Beginning Teacher Seminar 415-3 Beginning Teacher Seminar. (Same as PSAS 415) The application in the professional field setting, of principles and philosophies of the education system. Includes application of principles of curricula construction, programming student and community needs. Special approval needed from the department.

AGSE418 - Apps Integrated Software 418-3 Applications of Integrated Software in Agriculture. (Same as PSAS 418) Design of agricultural or educational applications of integrated software. Spreadsheet, database, word processing, graphic and communications software will be applied to the solution of agricultural problems. Individual student projects will be the focus of the applied nature of the class. Prerequisite: AGSE 318. Restricted to junior standing or consent of instructor.

AGSE431 - International Ag Systems 431-3 International Agricultural Systems. Introduction to world agriculture, farming systems, world crops, agricultural trade, and food production and processing. Influence of population and climate. Ethical issues surrounding rain forest, global agriculture, finance, world trade, crops and livestock, and the environment. Appropriate technologies and their social and economic impact on developing countries. Not for graduate credit. Restricted to junior standing or instructor consent.

AGSE433 - Intro to Ag Biotechnology 433-3 to 7 Introduction to Agricultural Biotechnology. (Same as ANS 433, CSEM 433, HORT 433, PLB 433, PSAS 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer, and expression will be derived.

AGSE438 - Molecular Genetics Lab 438-3 Plant and Animal Molecular Genetics Laboratory. (Same as PLB 438, CSEM 438, PSAS 438, ZOOL 438) Arabidopsis and Drosophila model organisms, lab-based training in laboratory safety, reagent preparation, phenotype analysis, genetics, DNA and RNA analysis, PCR, cDNA construction, cloning and sequencing of genes. Includes plant and bacterial transformation, and a population level analysis of genetic variation using RAPD markers in grasses and Alu insertion in humans. Two 2-hr labs and one 1-hr lecture per week. Prerequisite: BIOL 305 or equivalent or consent of instructor. Lab fee: \$30.

AGSE461 - Programming for Ag Systems 461-3 Programming for Agricultural Systems. (Same as PSAS 461) Computer programming concepts and strategies are applied to agricultural problems and systems. Students will analyze problems, design solutions, develop software and test solutions. Students will be expected to develop a software project related to their academic interests. Not for graduate credit. Prerequisite: AGSE 318. Special approval needed from the department. Laboratory fee: \$10.

AGSE463 - Ag Electrical Systems 463-3 Agricultural Electrical and Electronics Systems. (Same as PSAS 463) Electrical and electronic knowledge and basics skills are developed and implemented with practical exercises and projects. Electrical and electronics circuits and control systems will be planned and constructed, with emphasis on automation, convenience, codes and safety. Laboratory fee: \$40.

AGSE472 - Precision Agriculture 472-3 Precision Agriculture. (Same as PSAS 472) A study of the core components of Precision Agriculture including the Global Positioning System (GPS), multispectral and

hyperspectral remote sensing technology, Geographic Information Systems (GIS), soil sampling, yield monitoring, and analysis & decision making systems applied for site specific management of production agriculture resources. Lab fee: \$5.

AGSE473 - Agricultural Automation 473-3 Agricultural Automation. (Same as PSAS 473) This course introduces students to topics such as power distribution, programmable controllers, sensors and components, ladder control circuits and diagrams, and motor controls. The lab will address automation issues for different industrial processes such as pasteurization. Prerequisite: AGSE 371. Lab fee: \$20.

AGSE476 - Ag Safety & Health 476-3 Agricultural Safety and Health. (Same as PSAS 476) Analysis of safety and health issues important to managers and supervisors in agricultural operations. Topics include agricultural accident data, causes and effects of accidents, hazard identification, strategies for accident prevention, response to accidents, and health risks and safeguards. Developments and documentation of accident and illness prevention activities in the workplace.

AGSE483 - Ag Processing Systems 483-3 Agricultural Processing Systems. (Same as PSAS 483) This course provides students with an understanding of the design principles, equipment, procedures and processes utilized in handling, processing and storing agricultural products. Prerequisite: AGSE 371.

AGSE488 - Food Engineering Technology 488-3 Food Engineering Technology. (Same as PSAS 488) This course introduces the basic principles of facilities planning for larger operations and complexes of the food processing industry, and gain management/technology insight in food engineering technology.

AGSE489 - Brewing and Distilling 489-3 Brewing and Distilling Technology. (Same as FERM 489, PSAS 489) The primary focus of this course is to introduce basic facilities planning for operations of the brewing and distilling industry, and to gain management and technology insight in brewing/distilling production. Prerequisite: FERM 480 with a grade of C or better. Restricted to Junior/Senior standing in Ag Systems Technology or Fermentation Science and instructor approval.

AGSE495 - Food & Pharmaceutical Pckgng 495-3 Food and Pharmaceutical Packaging. (Same as PSAS 495) Applied packaging and food engineering principles used in packaging, storing, preserving, and transporting food and drug products. Topics include packaging functions, graphic design, printing, sterilization, and food safety. Utilization of paper, glass, plastics, laminates, and metals. Applications of machinery and equipment. Not for graduate credit. Prerequisite: AGSE 371.

AGSE497 - Ag Operations Management 497-3 Agricultural Operations Management. (Same as PSAS 497) A capstone course in product support, interpretation of financial reports, preparing and monitoring budgets, time and process management, critical thinking, advanced problem solving. Prerequisites: AGSE 318, 371, 375. Restricted to senior standing.

AGSE499 - Ag Info for Teachers 499-3 Agriculture Information for K-12th Grade Teachers. (Same as PSAS 499) A general inquiry into the agriculture literacy appropriate for K-12th grade students. A framework for evaluating content appropriate for K-12th grade students in the pursuit of agriculture literacy will be developed. Special approval needed from the department.

Agricultural Systems and Education Faculty

Albers, Myron C., Instructor, M.S., Southern Illinois University, 1998.

Choudhary, Ruplal, Associate Professor, Ph.D., Oklahoma State University, 2004.

Jones, K. L., Professor and Chair, Ph.D., Texas A&M University, 1999.

Legacy, James, Professor, Emeritus, Ph.D., Cornell University, 1976.

Pense, Seburn L., Professor, Ph.D., Oklahoma State University, 2002.

Shoup, W. David, Professor, Emeritus, Ph.D., Purdue University, 1980.

Stitt, Thomas R., Professor, Emeritus, Ph.D., Ohio State University, 1967.

Watson, Dennis G., Associate Professor, Ph.D., Michigan State University, 1987.

Wolff, Robert L., Professor, Emeritus, Ph.D., Louisiana State University, 1971.

Allied Health

We offer you a wide variety of programs in the health care field- Dental Hygiene, Health Care Management, Mortuary Science and Funeral Service, Physical Therapist Assistant, and Radiologic Sciences. Our programs range from associate degree through graduate studies.

Allied Health Courses

AH105 - Medical Terminology 105-2 Medical Terminology. This course is an introduction to the study of medical language with a working knowledge of the most common word roots, prefixes and suffixes in medical terminology. Emphasis is placed on spelling, pronunciation, use of the medical dictionary and the Physician's Desk Reference (PDR), vocabulary building, common abbreviations and charting terms.

AH241 - Intro to Physiology & Anatomy 241-4 Introduction to Physiology and Human Anatomy. (Advanced University Core Curriculum course) A survey of the functions and structures of the ten basic systems of the human body: integumentary, skeletal, muscular, nervous, endocrine, hematocardiovascular, lymphoimmune, respiratory, genitourinary and reproductive. Satisfies the University Core Curriculum Human Health requirement in lieu of Physiology 201.

AH259 - Occupational Education Credit 259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by school evaluation.

AH358 - Work Experience Credit 358-1 to 12 Work Experience Credit. Credit granted for job skills, management-worker relationships and supervisory experience for past work experience while employed in industry, business, the professions, or service occupations. Credit will be established by school evaluation.

AH415 - Gerontology/Mortality 415-3 Issues Related to Social Gerontology and Mortality. Examine the social constructs of aging. Study theological, cultural, and historical aspects associated with aging, death, and dying. Provides an exploration of social gerontology and the sustainability and equitability of long term care along with the cultural and historical differences in how death, grief, and dying are perceived and managed. Further focus is given toward the social aspects of aging and how society, peers, family members, and healthcare professionals can empathetically improve relations with the aging population. Not for graduate credit. Restricted to SAH majors/minors or consent of department.

AH105 - Medical Terminology 105-2 Medical Terminology. This course is an introduction to the study of medical language with a working knowledge of the most common word roots, prefixes and suffixes in medical terminology. Emphasis is placed on spelling, pronunciation, use of the medical dictionary and the Physician's Desk Reference (PDR), vocabulary building, common abbreviations and charting terms.

AH241 - Intro to Physiology & Anatomy 241-4 Introduction to Physiology and Human Anatomy. (Advanced University Core Curriculum course) A survey of the functions and structures of the ten basic systems of the human body: integumentary, skeletal, muscular, nervous, endocrine, hematocardiovascular, lymphoimmune, respiratory, genitourinary and reproductive. Satisfies the University Core Curriculum Human Health requirement in lieu of Physiology 201.

AH259 - Occupational Education Credit 259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by school evaluation.

AH358 - Work Experience Credit 358-1 to 12 Work Experience Credit. Credit granted for job skills, management-worker relationships and supervisory experience for past work experience while employed in industry, business, the professions, or service occupations. Credit will be established by school evaluation.

AH415 - Gerontology/Mortality 415-3 Issues Related to Social Gerontology and Mortality. Examine the social constructs of aging. Study theological, cultural, and historical aspects associated with aging, death,

and dying. Provides an exploration of social gerontology and the sustainability and equitability of long term care along with the cultural and historical differences in how death, grief, and dying are perceived and managed. Further focus is given toward the social aspects of aging and how society, peers, family members, and healthcare professionals can empathetically improve relations with the aging population. Not for graduate credit. Restricted to SAH majors/minors or consent of department.

Animal Science

The Animal Science program is a part of the Department of Animal Science, Food and Nutrition. SIU Carbondale's nationally known animal science faculty is dedicated to teaching and to student development. Animal Science teachers at SIU represent the range of topics in animal agriculture. There are specialists in animal genetics, reproductive physiology, nutrition and management for each of the species, international food programs, and veterinary medicine. The animal science teachers bring their exciting experience with them into every class they teach. The combination of the visionary and the practical makes a strong and vital faculty for students who want the best professional education they can get.

The department offers three specializations leading to a B.S. degree: production, equine science, and pre-veterinary medicine. The latter allows qualified students to transfer to accredited colleges of veterinary medicine prior to receiving the Bachelor of Science degree in Animal Science.

Most of the students' agriculture courses for the major will be in animal science, but students can also select courses from agronomy, horticulture, human nutrition and dietetics, forestry, agricultural education, agricultural mechanization, agribusiness and economics, and farm management. Other classes help the student meet basic University requirements in a way that will strengthen their abilities to think, understand, and communicate about the social, physical and natural sciences important to animal scientists. Other departments offer supplemental coursework in physiology, genetics, nutrition, animal behavior, and other topics that many animal science students find valuable.

The animal science major is backed up with extensive facilities for several species of livestock, and every student has the opportunity to get involved in work, research, or observation at the University Farm. The core of our animal science program is the 2,000-acre farm system, which includes centers for beef, dairy, equine, and swine.

Hundreds of distinct occupations exist within the animal agriculture field. There are opportunities in animal production work at farm operations, ranches, feedlots, stables and zoos. There are opportunities in feed and meatpacking industries, equipment suppliers, government and international agencies, veterinary medicine, and numerous other supporting industries that serve producers. Within each of these areas, animal science graduates are employed in such jobs as sales, service, education, communication, finance and business management. There may be extra expenses for field trips, manuals or supplies in some courses.

Technology Fee

The College of Agricultural Sciences assesses College of Agricultural Sciences undergraduate majors a technology fee of \$4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semesters.

Bachelor of Science Degree in Animal Science, College of Agricultural Sciences

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41

Degree Requirements	Credit Hours
To include MATH 108 or MATH 109 or MATH 111 or MATH 150, CHEM 140A or higher, ZOOL 118, BIOL 211, ABE 204.	
Requirements for Major in Animal Science - Core Requirements	33
ANS 121, ANS 122, ANS 215, ANS 315, ANS 331, ANS 332, ANS 337, ANS 381, ANS 431, plus one course from ANS 409, ANS 430, ANS 465, or ANS 485	28
Agriculture electives, excluding ANS	5
Specialization Requirements - Fulfill the requirements of one of the following specializations:	46
Total	120

Production Specialization

Degree Requirements	Credit Hours
CHEM 140B or higher	4
ANS 415 one additional course from ANS 409, ANS 430, ANS 465 or ANS 485	8
ANS 300- or 400-level courses	9
ABE 350 or ABE 351	3
AG Electives	4
Electives	18
Total	46

Equine Science Specialization

Degree Requirements	Credit Hours
CHEM 140B or Higher	4
ABE 350 or ABE 351	3
ANS 219, ANS 309, ANS 314, ANS 409, ANS 419, ANS 490	26
4 credit hours from ANS 112, ANS 212, ANS 312 or ANS 412	4

Degree Requirements	Credit Hours
AG Electives	1
Electives	8
Total	46

Pre-Veterinary Medicine Specialization

Degree Requirements	Credit Hours
Substitute CHEM 200, CHEM 201, CHEM 202 for CHEM 140A	1
MATH 109	3
CHEM 210, CHEM 211, CHEM 212, CHEM 340, CHEM 341, CHEM 350	13
PHYS 203A,B and PHYS 253A,B	8
BIOL 211	4
MICR 301	4
ANS electives including one additional 300- or 400-level course	8
Electives	5
Total	46

Minor in Animal Science or Equine Studies

The minor in Animal Science or Equine Studies requires 16 semester hours, of which at least 12 must be earned at Southern Illinois University Carbondale. An advisor within the department must be consulted before selecting this field as a minor. ANS 112, ANS 123C, ANS 212, ANS 219, ANS 309, ANS 312, ANS 314, ANS 315, ANS 337, ANS 390, ANS 409, and ANS 412. These minors are not awarded to students who have a major in Animal Science.

Non-Degree diploma in Companion Animal Nutrition

The non-degree diploma program is intended to enhance the marketability and training of students who wish to pursue careers in Animal and Veterinary management and sciences. Enrollment in the Animal Science major is not required to complete the program. While the diploma itself does not lead to a degree, courses can be counted in the Animal Science specializations as electives. Student not wishing to pursue a baccalaureate must complete the unclassified undergraduate application.

Requirements for non-degree diploma in Companion Animal Nutrition: 18 cr. hours

Courses: ANS 115, ANS 215, ANS 316, ANS 365, ANS 445, ANS 481

Animal Science Courses

ANS112 - Intro to Horsemanship 112-2 to 8 (2 per semester) Introduction to Horsemanship. Designed for students with little or no horse riding experience. A holistic approach to handling and riding horses using natural laws governing horses and balance. Class time is primarily hands-on work with some classroom time. Students must be able to lead, groom, tack, mount and ride a horse. Horses are restricted to carrying 250 pounds. Facilities/Riding Fee: \$300.

ANS115 - Intro Companion Anim Nutrition 115-3 Introduction to Companion Animal Nutrition. Focus on the basic science of companion animal nutrition and the nutrient needs of dogs and cats, rabbits, birds, aquarium fish, rodents and reptiles. Students will also learn the different types and forms of pets food, how to evaluate pets food, and regulations of pets food and labeling.

ANS121 - Intro to Animal Science 121-3 Introduction to Animal Science. [IAI Course: AG 902] A general overview of dairy, meat animals (swine, beef, sheep), poultry, and horse industries with emphasis on how meat, milk, and poultry products are produced and distributed. The general application of genetic, physiologic, and nutrition principles for the improvement of animal production to further serve people.

ANS122 - Livestock Production Lab 122-1 Livestock Production Laboratory. [IAI Course: AG 902] Livestock facilities, demonstration of management practices of animals for human use and the processing of animal products. Laboratory fee: \$40.

ANS123A - Livestock Practicum: Beef 123A-1 to 2 Livestock Practicum-Beef. Provides students with limited previous livestock experience an opportunity to participate in the routine care and management procedures at one of the University's livestock centers.

ANS123B - Livestock Practicum: Dairy 123B-1 to 2 Livestock Practicum-Dairy. Provides students with limited previous livestock experience an opportunity to participate in the routine care and management procedures at one of the University's livestock centers.

ANS123C - Livestock Practicum: Horse 123C-1 to 2 Livestock Practicum-Horse. Provides students with limited previous livestock experience an opportunity to participate in the routine care and management procedures at one of the University's livestock centers. Lab fee: \$50.

ANS123D - Livestock Practicum: Swine 123D-1 to 2 Livestock Practicum-Swine. Provides students with limited previous livestock experience an opportunity to participate in the routine care and management procedures at one of the University's livestock centers.

ANS200 - Companion Animal Care & Mgmt 200-2 Companion Animal Care and Management. Principles and practice of proper feeding and care of companion animals, with emphasis on dogs and cats. Nutrition, digestive systems, reproduction, and health care will be discussed.

ANS210 - Livestock Products & Process 210-3 Livestock Products & Processing. Processing and distribution of meat and dairy products. Consumption, nutritional value, cooking and serving of these products. Nomenclature and identification of meat cuts. Breeds, classes, and evaluation of meat and dairy animals. Fee: \$10.

ANS211 - Animal Selection & Evaluation 211-1 to 4 (1 to 2, 1 to 2) Animal Selection and Evaluation. Livestock, Horses, Dairy. Selection and evaluation of breeding and/or market animals including livestock (beef, sheep, swine and goats); horses; or dairy cattle. Includes competitive judging, but participation on SIUC Intercollegiate Livestock, Horse, or Dairy Judging Teams is not a required part of this course. Special approval needed from the instructor.

ANS212 - Intermediate Horsemanship 212-2 Intermediate Horsemanship. Designed for intermediate riders to improve their horse riding skills using primarily mounted exercises following the natural laws governing horses and balance, emphasizing independent use of the rider's natural aids. Students must be able to lead, groom, tack, mount and ride a horse. Horses are restricted to carrying 250 pounds. Course is repeatable up to 4 times during the student's academic career. Prerequisite: ANS 112 or consent of instructor (tryouts required). Facilities/Riding fee: \$300.

ANS215 - Introduction to Nutrition 215-2 Introduction to Nutrition. (Same as HND 215) An up-to-date study of the principles of nutrition including classification of nutrients (physical and chemical properties) and their uses in order to provide the student a working knowledge of nutrition in today's environment.

ANS219 - Introductory Horse Management 219-4 Introductory Horse Management. Designed for the beginning science student or non-science majors with an interest in horses. Information on topics related to horse selection and care coupled with laboratory experience provide essential information for the care of horses owned for pleasure. Fee: \$35.

ANS250 - Human Values in Livestock Prod 250-3 Human Values in Livestock Production. Improvements in livestock production technology have resulted from research. These technologies contribute to the welfare of a growing population of humans. However, the application of new technologies often interact with a public perception of animals as exploited species in a manner conflicting with human values. These conflicts are discussed from a scientific and philosophic viewpoint.

ANS309 - Equine Evaluation & Performance 309-3 Equine Evaluation and Performance. This course explores the conformation and functional anatomy of the athletic horse, particularly as it relates to locomotion. Gaits and movement will be studied. Methods to influence movement will be considered and how these impact athletic ability or potential. Fee: \$25.

ANS312 - Advanced Horsemanship 312-2 Advanced Horsemanship. Classroom, ground and mounted work explore communication and balance of the horse and rider combination. Feel, timing and balance are emphasized while working with horses needing further education. Time outside class required. Students must be able to lead, groom, tack, mount and ride a horse. Horses are restricted to carrying 250 pounds. Course is repeatable up to 4 times during the student's academic career. Prerequisite: ANS 212 or consent of instructor (tryouts required). Facilities/Riding fee: \$300.

ANS314 - Forages 314-3 Forages: An Introduction to Grassland Agriculture. An introduction to grassland agriculture encompassing characteristics of forage species, forage/grazing management, and forage utilization with an emphasis in livestock systems. Laboratory/Field trip fee: \$15.

ANS315 - Feeds and Feeding 315-3 Feeds and Feeding. Principles of applied animal nutrition. Ration formulation to meet specific nutrient needs of livestock. Feedstuff evaluation, including cost will be discussed. Prerequisite: MATH 107 or above.

ANS316 - Rations Companion Animals 316-3 Rations for Feeding Companion Animals. This course will describe the basic characteristics of common feeds used in companion animal diets and the principles of utilizing these to meet animal requirements for maintenance and throughout the life-cycle. Prerequisite: ANS 215 or concurrent enrollment.

ANS319 - Horse Handling & Horsemanship 319-2,2 (2 to 4) Horse Handling and Horsemanship. Students will learn principles of communicating tasks to horses using aids natural to horse behavior. Many different groundwork exercises are practiced. Prerequisite: ANS 112, 212, 312 or consent of instructor.

ANS331 - Growth, Develop, Physiology 331-4 Growth and Developmental Physiology of Animals. A comparative study of domestic animal function is presented using an organ system approach. How cell, tissue and organ structure is related to physiological function is emphasized. The mechanism of animal growth and development will be discussed.

ANS332 - Animal Genetics 332-3 Animal Genetics. Principles of molecular genetics, Mendelian genetics, population genetics and quantitative genetics and their application to animal improvement. Prerequisite: ANS 121, MATH 108 or above.

ANS333 - Animal Genetics Lab 333-1 Animal Genetics Laboratory. One three-hour lab per week. Laboratory course provides experiences with genetic laboratory experimentation and interpretation of data. Prerequisite: Completion of, or concurrent enrollment in ANS 332. Lab fee: \$35.

ANS337 - Animal Health 337-3 Animal Health. Principles of prevention and control of infectious, nutritional and parasitic disease of farm animals. Restricted to junior or senior standing. Lab fee: \$30.

ANS359 - Internship Program 359-2 to 6 (2 to 3, 2 to 3) Intern Program. Work experience program in animal production units and agricultural agencies of the government or agribusiness. Restricted to junior standing. Special approval needed from the chair. Mandatory Pass/Fail.

ANS365 - Canine & Feline Nutrition 365-3 Canine and Feline Nutrition. Focus on nutrients requirement and the feeding during the life cycle (maintenance, growth, gestation, lactation, seniors and performance) of cats and dogs. Nutrients digestion and metabolism, energy balance, and food processing, evaluation and labeling will be explored. Maximum enrollment is 15. Prerequisite: ANS 215 or concurrent enrollment.

ANS380 - Field Studies For/Dom Anml Agr 380-1 to 6 Field Studies in Foreign and Domestic Animal Agriculture. A travel course to observe and study the operation and management of farms, ranches, and feedlots as well as agribusiness firms supporting animal production such as food processors, feed manufacturers, and housing or equipment companies in either the United States or foreign countries. A written report is required. The travel fee charged to the student will depend on the nature and the length of the course.

ANS381 - Animal Science Seminar 381-1 Animal Science Seminar. Discussion of problems and recent development in animal science. Prerequisite: ANS 121. Restricted to junior standing.

ANS390 - Special Studies Animal Science 390-1 to 4 Special Studies Animal Science. Assignment involving research and individual problems. Restricted to juniors and seniors only. Special approval needed from the chair.

ANS409 - Equine Science 409-4 Equine Science. Designed for students interested in the more scientific aspects of equine physiology and management. The class will take a more advanced look at anatomy and physiology of the systems of the equine and consider how they relate to selection, use and management. Lecture and laboratory. Prerequisite: ANS 219 and 331. Fee: \$50.

ANS412 - Horsemastership 412-2 Horsemastership. This course involves the advanced equestrian in the evaluation and resolution of special problems in horse training. Students will work with a single horse during the semester to master an individual training goal set in consulting with the instructor. Emphasis will be placed on the use of non-violent training techniques. Course is repeatable up to 4 times during the student's academic career. Not for graduate credit. Prerequisite: ANS 312 or consent of instructor. Facilities/riding expenses are \$300 per class minimum.

ANS415 - Advanced Animal Nutrition 415-4 Advanced Animal Nutrition. Advanced principles and practices associated with digestion, absorption, and metabolism of nutrients as related to domestic monogastrics, ruminants and horses. Prerequisite: ANS 215 and 315.

ANS419 - Stable Management 419-3 Stable Management. Designed for the advanced equine student planning a career in the horse field. Mastery of in-depth management techniques on an applied basis is emphasized. Farm, animal and personnel management are practiced. Extensive out-of-class practice time is expected. Prerequisites: ANS 409 with a grade of C or better. Lab fee: \$90.

ANS420 - Companion Animal Behavior 420-3 Companion Animal Behavior-Animals at Work. This course focuses on the behavior of dogs and horses and will incorporate hands-on training techniques as well as pack/herd observation. Students will understand the difference between classical and operant conditioning, negative and positive reinforcement and will have the opportunity to observe social behavior, reproductive behavior, eating behaviors as well as dominant and submissive behaviors. Key features of the course include a study of the work that dogs and horses perform for man as well as a history of how those working relationships developed. All students with a passion for animals are encouraged to enroll. Lab fee: \$50.

ANS421 - International Animal Productn 421-2 International Animal Production. A study of world animal production practices with emphasis on the developing countries. Adaptability of animals to environmental extremes and management practices employed to improve productivity. Prerequisite: ANS 121. Restricted to junior standing.

ANS422 - Nutrition Mgmt Zoo Animals 422-4 Nutritional Management of Zoo Animals. The class will provide students with the most recent information on nutrients requirements and feeding of zoo animals. Students will also learn about zoo animals digestive system and physiology, feeding behavior, nutrition

disorders and diseases. Field trips to local zoos. Prerequisite: ANS 215 and ANS 315 with grades of C or better.

ANS425 - Nutrition Biochemistry 425-3 Biochemical Aspects in Nutrition. (Same as HND 425) The interrelationship of cell physiology, metabolism and nutrition as related to energy and nutrient utilization, including host needs and biochemical disorders and diseases requiring specific nutritional considerations. Prerequisite: ANS 215 or HND 320, CHEM 140B, PHSL 201 and 208.

ANS426 - Comparative Endocrinology 426-3 Comparative Endocrinology. (Same as PHSL 426, ZOOL 426) Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues, including mechanisms of transport, receptor kinetics, and signal transduction. Prerequisites: ANS 331 or ZOOL 220 or PHSL 310 with a minimum grade of C. Laboratory/Field Trip fee: \$15.

ANS428 - Nutritional Mgmt Zoo Animals 428-4 Nutritional Management of Zoo Animals. The class will provide students with the most recent information on nutrient requirements and feeding of zoo animals. Students will also learn about zoo animals' digestive system, feeding behavior, physiology, nutrition disorders, and diseases. Prerequisites: ANS 215 and ANS 315 with grades of C or better.

ANS429 - Equine Enterprise Mgmt 429-2 Equine Enterprise Management. Study of the diverse horse industry and business management practices involved with the operation of a successful horse enterprise. Analysis of a commercial horse operation will be explored through an in-depth, self-directed farm project. Field trips and guest speakers will inform students for the farm project. An on-campus horse event will be planned and executed as a class project. Prerequisites: ANS 409, ABE 350 or 351. Field trip fee: \$40.

ANS430 - Dairy Cattle Management 430-4 Dairy Cattle Management. Application of the principles of breeding, physiology, and economics to management of a profitable dairy herd. Breeds of dairy cattle, housing, milking practices, and quality milk production. Prerequisite: ANS 315. Lab/Field trip fee: \$50.

ANS431 - Reproductive Physiology 431-4 Reproductive Physiology. Comparative anatomy and physiology of the male and female reproductive system of domestic animals; hormones; reproductive cycles; mating behavior; gestation and parturition; sperm physiology; collection and processing of semen; artificial insemination, pregnancy tests; diseases. Prerequisite: ANS 121, ANS 331. Laboratory fee: \$50.

ANS433 - Intro to Ag Biotechnology 433-3 to 7 Introduction to Agricultural Biotechnology. (Same as AGSE 433, CSEM 433, HORT 433, PLB 433, PSAS 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer, and expression will be derived. Restricted to senior standing.

ANS434 - Physiology of Lactation 434-2 Physiology of Lactation. Anatomy and physiology of milk secretion; endocrine control; milk precursors and synthesis; milk composition; physiology and mechanics of milking; lactation-related disorders and diseases; transgenic milk. Prerequisite: ANS 331.

ANS435 - Ag Molecular Biotech Seminar 435-1 to 4 Agricultural Molecular Biotechnology Seminar. (Same as CSEM 435) Molecular biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded P/F only.

ANS445 - Companion Anim Clin Nutr 445-4 Companion Animal Clinical Nutrition. Nutrition and feeding management of canine and feline during obesity, cancer, diabetes, urolithiasis, dental disease, dermatological disease, hepatic and gastrointestinal disorders, mobility and muscular disorders, heart diseases, and critical care. Prerequisite: ANS 215 with a grade of C or better.

ANS455 - Animal Nutrient Management 455-2 Animal Nutrient Management. Scope and problems associated with animal nutrient management; current regulations and laws on environmental protection.

Principles covering waste management technology and current livestock nutrient management systems are presented. Field trips will be scheduled. Restricted to junior standing.

ANS465 - Swine Management 465-4 Swine Management. Swine production systems and management techniques including breeding and selection, reproduction, nutrition, herd health and disease prevention, housing and waste management, marketing, production costs, and enterprise analysis. Field trip. Prerequisite: ANS 315 or consent of instructor. Lab fee: \$50.

ANS477 - Aquaculture 477-3 Aquaculture. (Same as ZOOL 477) Production of food, game and bait fishes. Design of facilities, chemical and biological variables, spawning techniques, diseases and nutrition. Two lectures per week and one four-hour laboratory on alternate weeks. Prerequisites: BIOL 200A or BIOL 211 or ZOOL 118 or ANS 121 with grade of C or better.

ANS481 - Topics Companion Animal Nutrit 481-3 Current Topics in Companion Animal Nutrition. This course is designed to develop written communication skills while learning to critique literature concerning current topics in the field of companion animal nutrition. Not for graduate credit. Prerequisite: ANS 115 and ANS 365.

ANS485 - Beef Cattle Management 485-4 Beef Cattle Management. Beef cattle production systems and management, breeding and selection, reproduction, nutrition, and herd health with emphasis on the most economical and efficient systems. Prerequisite: ANS 315, ANS 332 or concurrent enrollment. Lab/Field trip fee: \$50.

ANS490 - Horse Industry Internship 490-4 to 8 Horse Industry Internship. Provides the Equine Science students with the opportunity for diversified, practical experience in their area of career-goal interest. One semester will be spent working in a commercial horse-related industry. Not for graduate credit. Prerequisite: ANS 409, 419. Restricted to senior standing. Special approval needed from the instructor.

ANS495 - ANS Instruction 495-1 to 6 Instruction in the Animal Sciences. Acquaints the students with different teaching environments and styles. Students will be expected to participate in instructing animal science courses. Restricted to junior standing. Special approval needed from the instructor. Not for graduate thesis option credit.

ANS500 - Research Method Agri Sci 500-3 Research Methods in Agricultural Science. Experimental design and biometry as applied to biological and allied fields. Restricted to graduate students.

ANS506 - Instr Method in Agri Sci 506-3 Instrumentation Methods in Agricultural Science. Basic methods and techniques of analytical instrumentation used in human and animal nutrition are taught in the lectures with applications of instruments carried out in the laboratories. Special approval needed from the instructor. Lab fee: \$100.

ANS515 - Energy Protein Utilization 515-3 Energy and Protein Utilization. (Same as FN 515) Energy and protein utilization including digestion, absorption and metabolism as related to mammalian physiology. Prerequisite: CHEM 339 or 340.

ANS516 - Minerals and Vitamins 516-3 Minerals and Vitamins. (Same as FN 516) Basic and applied principles of mineral and vitamin metabolism. Emphasis on metabolic functions, reaction mechanisms and interrelationships. Prerequisite: CHEM 339 or 340.

ANS525 - Ruminant Nutrition 525-3 Ruminant Nutrition. Physiology of rumen, action and microbiology of rumen digestion and utilization of carbohydrates, lipids and nitrogenous substances in ruminant animals. Absorption and assimilation of nutrients by the ruminant animals. Feeding standards for maintenance, growth, reproduction and lactation. Two lectures per week. Prerequisite: ANS 415 or consent of instructor.

ANS531A - Adv Animal Physiology 531A-1 to 6 (2,2,2) Advanced Animal Physiology. Advanced Physiological concepts as they relate to mammalian systems-subjects covered are: advanced reproductive physiology. Prerequisite: ANS 331 or PHSL 201.

ANS531B - Adv Animal Physiology 531B-1 to 6 (2,2,2) Advanced Animal Physiology. Advanced Physiological concepts as they relate to mammalian systems-subjects covered are: developmental physiology. Prerequisite: ANS 331 or PHSL 201.

ANS531C - Adv Animal Physiology 531C-1 to 6 (2,2,2) Advanced Animal Physiology. Advanced Physiological concepts as they relate to mammalian systems-subjects covered are: endocrine physiology. Prerequisite: ANS 331 or PHSL 201.

ANS563 - Fundamentals of Poultry 563-1 Fundamentals of Poultry. Fundamental principles of poultry production (broiler, turkey and egg production) including poultry physiology, breeding, incubation, housing, nutrition, disease control, management and marketing.

ANS564 - Aquaculture Techniques 564-1 to 2 Aquaculture Techniques. (Same as ZOOL 564) Practical experience in aquaculture techniques. Course consists of modules which require student participation in hands-on experience, (e.g., spawning, induction of spawning, production of fry, operation and grading, diagnosis and treatment of parasites and diseases, and transporting of fish). One credit for completion of two modules. Register any semester, one year to complete elected number of modules. Written report and examination required for each module. Cost incurred by student varies with modules selected. Prerequisite: ANS 477 or ZOOL 477 or consent of instructor.

ANS565 - Advanced Ruminant Nutrition 565-3 Advanced Ruminant Nutrition. Principles of nutrients metabolism and utilization by ruminant animals in relation to maintenance, growth, reproduction and lactation. Prerequisite: ANS 415 or consent of instructor.

ANS570 - Advanced Aquaculture 570-3 Advanced Aquaculture. (Same as ZOOL 570) Special topics in aquaculture and practical methods for the production of coldwater, coolwater, warmwater, and tropical aquatic species. Prerequisite: ANS 477 or ZOOL 477 or equivalent with a grade of C or better.

ANS571 - Fish Reproduction & Breeding 571-3 Fish Reproduction and Breeding. (Same as ZOOL 571) Principles of finfish reproductive strategies, reproductive physiology and captive breeding. The role of genetics and the use of biotechnology and various techniques in breeding programs will also be emphasized. The purpose of this course is to develop an understanding of fish reproduction and breeding techniques and to gain an appreciation of the complexity involved in managing a hatchery breeding program. Two lectures a week and one four-hour lab alternate weeks. Prerequisite: ANS 477 or ZOOL 477 or equivalent with a grade of C.

ANS581 - Seminar 581-1 to 2 (1,1) Seminar. Problems relating to various phases of animal industries. Maximum of one hour per semester.

ANS588 - International Grad Study 588-1 to 8 International Graduate Studies. University residential graduate study program abroad. Prior approval by the department is required both for the nature of the program and the number of credit hours.

ANS590 - Readings in Animal Science 590-1 to 3 Readings in Animal Science. Reading in specialized fields under direction of approved graduate specialists.

ANS592 - Global Research in Agriculture 592-1 to 3 Global Research in Agriculture. Research interest in animals unique to certain regions of the world is a growing field to graduate students interested in world sustainable agricultural practices. This class is designed for students interested in taking research based information and skills from Southern Illinois University and applying it to projects with animals native to certain regions of the world to improve productivity and sustainability. This course provides graduate students interested in global and sustainable research the opportunity to conduct their research and training on regional animals not traditionally found in North America (eg. camels, water buffalo, kangaroo,... etc). Course fee up to \$5,000 per credit hour.

ANS593 - Individual Research 593-1 to 3 Individual Research. Investigation of a problem in animal science under the supervision of an approved graduate specialist.

ANS595 - ANS Instruction 595-1 to 4 Instruction in Animal Sciences. Acquaints the students with different teaching environments and styles. Students will be expected to aid faculty in the instruction of animal science courses.

ANS599 - Thesis 599-1 to 6 Thesis. Credit is given for a Master's thesis when it is accepted and approved by the thesis committee. Not for non-thesis option credit.

ANS601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Animal Science Faculty

AbuGhazaleh, Amer A., Associate Professor, Ph.D., South Dakota State University, 2002.
Apgar, Gary A., Associate Professor, Ph.D., Virginia Polytechnic Institute, 1994.
Arthur, Robert D., Professor, Emeritus, Ph.D., University of Missouri, 1970.
Atkinson, Rebecca L., Associate Professor, Ph.D., University of Wyoming, 2006.
Gastal, Eduardo L., Associate Professor, Ph.D., University of Wisconsin-Madison, 2009.
Goodman, Bill L., Professor, Emeritus, Ph.D., Ohio State University, 1959.
Hausler, Carl L., Associate Professor, Emeritus, Ph.D., Purdue University, 1970.
Jones, Karen L., Professor, Ph.D., Texas A&M University, 1999.
King, Sheryl S., Professor, Emerita, Ph.D., University of California at Davis, 1983.
Kroening, Gilbert H., Professor, Emeritus, Ph.D., Cornell University, 1965.
Minish, Gary L., Professor, Emeritus, Ph.D., Michigan State University, 2004.
Speiser, Stephanie A., Senior Lecturer, M.S., Southern Illinois University Carbondale, 2000.
Strack, Louis E., Associate Professor, Emeritus, D.V.M., University of Illinois, 1961.
Venable, Erin B., Assistant Professor, Ph.D., University of Missouri-Columbia, 2010.
Young, Anthony W., Professor, Emeritus, Ph.D., University of Kentucky, 1969.

Anthropology

Anthropology is the study of humans and their cultures in terms of universal features, variability, and development through time. The major subdivisions are socio-cultural anthropology, linguistics, archaeology, and (biological) physical anthropology. Anthropology provides capable students with an intensive program emphasizing early integration into upper division coursework. This major is appropriate for the outstanding liberal arts student seeking a distinctive program. Grades below C in Anthropology courses will not be accepted as fulfilling major requirements.

Students are expected to gain a broad background in all subfields, after which the options of further general study or specialization are available. Students are encouraged to supplement their anthropological studies with work in other social sciences, and where appropriate in biology, earth sciences, humanities, mathematics, or other areas.

Most professional anthropologists find employment as teachers and researchers in colleges and universities. However, a major in anthropology provides the student with a unique liberal arts background bridging the humanities, social, earth, biological, and chemical sciences, which leads to many other professional opportunities outside of teaching and research.

An anthropology major is required to take ANTH 240A,B,C, D, ANTH 300, and one each of the ANTH 310/ANTH 328 and ANTH 410 course series. Students are encouraged to take ANTH 300 early in their studies. No more than six hours of ANTH 460 (independent study) and no more than six hours of additional 200-level course work (i.e., in addition to the 240 series) may be applied to the major. Anthropology seniors are required to participate in the Senior Seminar (ANTH 480). It should be noted that graduate departments often require foreign language and mathematical background beyond that required by the undergraduate program. Students not interested in advanced study will be advised on an individual basis reflecting their own particular interests and aspirations.

Students with scholarly promise are encouraged to write an honors thesis under the direction of a departmental faculty member in the spring of their senior year. This thesis can be part of an Anthropology

Honors Major (see below), although students who are not enrolled in University Honors may also write an honors thesis.

Bachelor of Arts Degree in Anthropology, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	12
Requirements for Major in Anthropology - ANTH 240A, ANTH 240B, ANTH 240C, ANTH 240D, and ANTH 480 required, and an additional nine hours: three of ANTH 310 or ANTH 328 series, three of 410 series, and three more of 400-level course work in anthropology, plus 9 credit hours of electives in anthropology.	33
Electives	36
Total	120

Anthropology Minor

A minor in anthropology consists of at least 15 hours including at least two of the four courses: ANTH 240A, ANTH 240B, ANTH 240C, ANTH 240D, and a minimum of three of the remaining nine hours of 310 series or 400-level courses.

Related interdisciplinary minors are also available in several areas, including Africana Studies, Forensic Science, Latino and Latin American Studies, Museum Studies, Native American Studies, and Women, Gender and Sexuality Studies. See separate listings under these minors for full descriptions.

Anthropology Honors Major

Outstanding students enrolled in the University Honors Program may pursue an Honors Major in Anthropology. Requirements are identical to those for a regular Bachelor of Arts Degree (including 32 hours in Anthropology) except that at least eight classes must be honors classes; usually, these are four UHON classes in years one and two, and four Anthropology honors classes in years three and four.

Honors classes in Anthropology include the following: ANTH 310H (Peoples and Cultures of xxx/world area-these change, and honors students can use ANTH 310H to take an honors enhanced version of any one); ANTH 405H (How to do Anthropological Research-honors section); and ANTH 499 (Honors Thesis). In addition, students may receive Honors credit for a non-Honors course through an Honors contract with the course instructor.

Anthropology Students Doing a Semester Abroad

Anthropology students are encouraged to study abroad as an enrichment of their B.A. in anthropology. Although programs will vary, this plan assumes that the student will be able to take at least one 300- or 400-level equivalent that can serve as an elective in Anthropology. Note that while it is also possible to fulfill the language requirement for the College of Liberal Arts in intensive language study during one semester of study abroad, this must be approved by the Dean's office.

Anthropology Courses

ANTH104 - Human Experience-Anthro 104-3 The Human Experience-Anthropology. (University Core Curriculum) [IAI Course: S1 900N] This course explores different human life ways around the world, past and present. It investigates the question of what is universal to all humans and the myriad ways they differ, through studying modern people, the re-mains of past cultures through archaeology, and human origins and physical variation.

ANTH201 - Archaeology of Illinois 201-3 Archaeology of Illinois. A survey of prehistoric cultural development, its causes and consequences, as seen through the archaeology of Native American cultural development in the Illinois region, from the earliest foragers to European contact.

ANTH202 - America's Diverse Cultures 202-3 America's Diverse Cultures. (University Core Curriculum) The United States is a multicultural society in which differences of race, ethnicity, gender, class, region, and religion deeply shape individuals' life chances. This course studies America's diversity of family organization, livelihood and life chances, understanding of illness and health care, religious beliefs and practices, and other topics. It provides tools to understand different cultural codes and forms of power, and to understand key issues that students will face as individuals and citizens in a multicultural world.

ANTH204 - Latinos in America 204-3 Latino Cultures in America. (University Core Curriculum) The central concern of this course is the cultural aspect of the Latino experience in the United States. It focuses on the contemporary population, the political and economic issues that affect Latinos in this society, and the characteristics that Latinos share and yet that make Latinos the most diverse population in the United States. These characteristics include family, religion, socio-economic status, gender ideology, generational relations, and more. The course pivots around the construction of Latino identity: What helps shape it? How do Latinos perceive themselves? How do others perceive (us) them?

ANTH205 - Latin American Civilizations 205-3 Latin American Civilizations. (University Core Curriculum) [IAI Course: S2 910N] Introduction to three civilizations of Latin America: Mexica Aztec; Inca; and Maya. Prehispanic culture history in the lower Amazon River basin and the impact of Spanish contact and conquest on these native Latin American populations will also be discussed.

ANTH206 - Latin American Popular Culture 206-3 Latin American Popular Culture. This course examines the most significant expressions of popular culture in Latin America. It focuses on how people with different class and ethnic backgrounds produce alternative readings of the national culture in their own country and outside it.

ANTH207 - Sustainability 207-3 Sustainability. Over the course of its 150 year history, anthropology has documented the ways people engage with and adapt to the environments they live in. This anthropological record covers nearly 150,000 years of human existence and every environment on planet earth. Anthropological knowledge about human adaptation also gives us a glimpse into what arrangements between practice, values, policy, and technology have allowed people to live for prolonged periods of time in certain environments and which ones have not. This class introduces students to the ways anthropologists approach the concept of sustainability, and the theories and methods they use to study it.

ANTH208 - Lost Cities & Buried Treasures 208-3 Lost Cities and Buried Treasures. This survey of our past examines the variety of human communities and societies. We focus on the "big developments" during the last three million years: the first use of tools and fire, the first appearance of religion and belief systems, the first art, the switch from foraging to farming (and its consequences), the growth of social inequality, and the first monuments, governments, states and empires.

ANTH210 - Survey of the Primates 210-3 Survey of the Primates. Our closest cousins, the primates, display a remarkable diversity of social behavior, reproductive behavior, positional behaviors and diets, and live in a wide variety of environments and ecosystems. This diversity will be reviewed, with an eye to understanding its origin in the past and its anatomical basis.

ANTH220 - Life of Apes 220-3 The Amazing Life of Apes: Our Closest Living Relatives in Film and Research. This half-semester course explores the lives of the five ape taxa, chimpanzees, bonobos, orangutans, gorillas and gibbons with the goal of providing clues to a better understanding of humans.

Through videos and lectures students will learn what it means to be an ape, where and how apes live, what distinguishes apes from monkeys and why humans are also apes.

ANTH231 - Intro Forensic Anthropology 231-3 Introduction to Forensic Anthropology. Forensic Anthropology is the application of the theoretical and practical techniques of physical anthropology to human remains of medico-legal significance. This course will focus on the teaching of theory and method appropriate to allow the creation of a biological profile for an unknown individual. Topics will include human osteology, techniques for estimating the age and sex of an individual from skeletal remains, analysis of trauma, skeletal recovery, and the evolving role of forensic anthropology in the medico-legal system. This course is required for the Interdisciplinary Forensic Sciences minor. No prerequisites.

ANTH240A - Human Biology: Intro Biol Anth 240A-3 Human Biology: An Introduction to Biological Anthropology. (University Core Curriculum) An introduction to humans as a biological species. Applies scientific method to exploring data on humans and our closest relatives, to better understand our place in the web of life as a biological organism. Includes genetics (particularly human genetics), evolutionary theory, primate behavior and evolution, human fossil record, and similarities and differences in modern humans, including blood groups, skin color, and disease susceptibility. \$10 fee per student.

ANTH240B - Intro Anthro Linguistics 240B-3 Introduction to Anthropological Linguistics. This course is intended as an introduction to the theories, methods and goals of anthropological linguistics, focusing on the structure and use of language in cultural context. Will address questions about what language is, how languages are similar and different, how and why speech patterns vary within a speech community, and how languages change.

ANTH240C - Intro to Archaeology 240C-3 Introduction to Archaeology. Covers basic theories and methods used in archaeology to study lifestyles of past cultures through an examination of their tools, house and community remains, and art works. Includes methods of excavation, dating techniques, and other methods of analysis. Open to both majors and non-majors.

ANTH240D - Intro to Social-Cultural Anth 240D-3 Introduction to Social-Cultural Anthropology. An exploration of current anthropological theories and methods for understanding human cultures from a comparative perspective; also examines human institutions such as religion, politics, and family cross-culturally. Although non-Western societies are emphasized, comparisons with our own are treated as well.

ANTH251 - Anthropology & Science Fiction 251-3 Anthropology Through Science Fiction. Basic concepts of anthropology are used to interpret the imaginary worlds of science fiction. Fictional alien cultures are examined to see how features of human biology, language, social organization, technology, etc. are patterned after or are different from known human cultures.

ANTH261 - Issues in Popular Anthro 261-3 to 6 Issues in Popular Anthropology. Topics in popular anthropology as selected by the instructor. Topics vary and are announced in advance. May be repeated with different instructors.

ANTH301 - Language in Culture & Society 301-3 Language in Culture and Society. (Same as LING 301) The problem of the uniqueness of human language and how it fits into culture and society. The origin and development of language. Topics covered include animal and human communication, language and world view, and the meaning of meaning.

ANTH304 - Origins of Civilization 304-3 Origins of Civilization. This course is a survey of development of those ancient complex societies known as civilizations around the world. The emphasis is on the use of archaeological data to understand the interplay of environmental and cultural factors that led to the beginnings of agriculture, population growth, and the origins of cities. Among the early societies that may be analyzed are Mesopotamia, Egypt, China, Europe, Maya, Aztec, and Inca.

ANTH310A - People & Cultures Africa 310A-3 Introduction to Peoples and Cultures-Africa. (Same as ANTH 470A, AFR 310A) An introduction to the prehistory, cultural history, and modern cultures of peoples-Africa.

ANTH310D - Peoples & Cultures Europe 310D-3 Introduction to Peoples and Cultures-Europe. (Same as ANTH 470D) An introduction to the prehistory, cultural history, and modern cultures of peoples in the geographic area in question. Area focus differs from course to course and semester to semester.

ANTH310E - Peoples & Cultures S America 310E-3 Introduction to Peoples and Cultures-South America. (Same as ANTH 470E) An introduction to the prehistory, cultural history, and modern cultures of peoples in South America.

ANTH310G - Peoples & Cultures N America 310G-3 Introduction to Peoples and Cultures-North America. (Same as ANTH 470G) An introduction to the prehistory, cultural history, and modern cultures of peoples in North America.

ANTH310H - Honors Peoples & Cultures 310H-3-6 Honors Peoples and Cultures. This course is designed to provide students in the University Honors program a survey of the prehistory, cultural history, and contemporary cultures of the geographic area in question. Topical emphasis may vary from year to year, in conjunction with other 310 sections. Special approval needed from the department (Restricted to students in University Honors program).

ANTH310I - People & Cultures Mesoamerica 310I-3 Introduction to Peoples and Cultures-Mesoamerica. (Same as ANTH 470I) An introduction to the prehistory, cultural history, and modern cultures of peoples in Mesoamerica.

ANTH310K - Peoples & Cultures Southwest 310K-3 Introduction to Peoples and Cultures-Native Peoples-Southwest. (Same as ANTH 470K) An introduction to the prehistory, cultural history, and modern cultures of the Native Peoples of the American Southwest.

ANTH328A - Intro Lang Culture Americas 328A-3 Introduction to Languages and Cultures of the Americas-North America. (Same as ANTH 428A) This course introduces the myriad of indigenous languages of the Americas. Focus is both descriptive and anthropological. Languages are considered with respect to their grammatical and discursive structures, historical relations, and their place within the sociocultural milieu of speakers. Areal focus is North America.

ANTH328B - Intro Lang Culture Americas 328B-3 Introduction to Languages and Cultures of the Americas-Mesoamerica. (Same as ANTH 428B) This course introduces the myriad of indigenous languages of the Americas. Focus is both descriptive and anthropological. Languages are considered with respect to their grammatical and discursive structures, historical relations, and their place within the sociocultural milieu of speakers. Areal focus is Mesoamerica.

ANTH328C - Intro Lang Culture Americas 328C-3 Introduction to Languages and Cultures of the Americas-South America. (Same as ANTH 428C) This course introduces the myriad of indigenous languages of the Americas. Focus is both descriptive and anthropological. Languages are considered with respect to their grammatical and discursive structures, historical relations, and their place within the sociocultural milieu of speakers. Areal focus is South America.

ANTH330 - Biological Found Humn Behavior 330-3 Biological Foundations of Human Behavior. Discussion of human sexual behavior, the opposition of violence and aggression with cooperative behavior, and the anthropological background of facts concerning whether these behaviors are driven by biological (instinctual) or purely cultural factors.

ANTH340E - Intro Arch Ancient Egypt 340E-3 Introduction to the Archaeology of Ancient Egypt. Detailed study of the early culture of ancient Egypt with emphasis on the evolutionary cultural development of Egypt. No prerequisites.

ANTH370 - Contemporary Human Problems 370-3 Anthropology and Contemporary Human Problems. The contribution of anthropology to an understanding of contemporary human problems of environmental crisis, world hunger and overpopulation, social stratification and internal order, war and international order. The approach is cross-cultural drawing on knowledge of all societies and cultures in space and time. Anthropological fundamentals are introduced at the beginning.

ANTH376 - Independ Stdy Classics Progrm 376-2 to 8 Independent Study in Classics Program. Special approval needed from the instructor and class section head.

ANTH380 - Study Abroad Anthropology 380-1 to 15 Study Abroad in Anthropology. Provides credit towards an undergraduate degree for study at a foreign institution, in an approved overseas program, or approved program offered by SIUC faculty. Determination of credit is made by the department based on the specific program and requirements. May be repeated. Prerequisites: one year of residence at this institution, good academic standing, completion of one of: ANTH 104, ANTH 202, ANTH 240A, 240B, 240C, or 240D. Special approval needed from the department.

ANTH404 - Art & Technology in Anth 404-3 Art and Technology in Anthropology. An introduction to the basic ways in which people utilize the natural resources of their habitat to meet various needs, such as food, shelter, transportation, and artistic expression. The nature of art, its locus in culture, and its integration into technical society will be considered.

ANTH405 - How To Do Anth Research 405-3 How to Do Anthropological Research. This course is designed to teach students the skills needed to consume the professional literature of anthropology intelligently. The subjects covered include: the importance of research questions or hypotheses, the logic of deducing test implications, literature search, sampling, measurement issues, data reduction and graphing, and simple inferential statistics.

ANTH405H - Research Methods 405H-3 How to Do Anthropological Research. This course is designed to teach students in the University Honors program the skills needed to consume the professional literature of anthropology intelligently. The subjects covered include: the importance of research questions or hypotheses, the logic of deducing test implications, literature search, sampling, measurement issues, data reduction and graphing, and simple inferential statistics. Not for graduate credit. This course is for students in the University Honors program.

ANTH406 - Intro Historical Linguistics 406-3 Introduction to Historical Linguistics. (Same as LING 406) An introductory survey of historical and comparative linguistics, including terminology, assumptions and methods of investigation. Satisfies the CoLA Writing-Across-the Curriculum requirement. Prerequisite: one of ANTH 240B, LING 300, or LING 405. Not for graduate credit.

ANTH410A - Practicing Anthropology 410A-3 Practicing Anthropology. This course is designed to get students acquainted with the notion of development and the challenges that the practice of anthropology faces when directed towards development and social change in both developing and developed countries. Prerequisite: ANTH 240D recommended for undergraduates.

ANTH410D - Ethnomusicology 410D-3 Ethnomusicology: Theory and Method. This seminar examines the social, cultural, experiential, evolutionary, and historical dimensions of music. It is designed for students for whom music is a topical interest, who need to gain foundational knowledge about the theory and methods of ethnomusicology. We will review the history of ethnomusicology, major theoretical debates, and current issues.

ANTH410E - Anthropology of Law 410E-3 Anthropology of Law. Anthropological thought on imperative norms, morality, social control, conflict resolution and justice in the context of particular societies, preliterate and civilized. Law of selected societies is compared to illustrate important varieties. Prerequisite: ANTH 240D recommended for undergraduates.

ANTH410F - Anthropology of Religion 410F-3 Anthropology of Religion. A comparative study of (religious) belief systems, with emphasis upon those of non-literate societies. Examination of basic premises and elements of these belief systems, normally excluded from discussions of Great Religions. Prerequisite: ANTH 240D recommended for undergraduates.

ANTH410G - Urban Anthropology 410G-3 Urban Anthropology. Contemporary cities are dynamic places where populations that differ in terms of class, race, and ethnicity establish particular relationships with geographic space and architectural structures. This class is designed to teach students how to experience and analyze urban spaces from an anthropological perspective, and how to apply anthropological theory and methods in urban planning.

ANTH410H - African Expressive Culture 410H-3 African Expressive Culture. (Same as AFR 410H) This course examines aspects of African expressive culture including the visual arts, music, dance, orature, cinema, drama and ceremony from an anthropological perspective. Particular attention is given to analysis of African expressive culture in social context and the role of the arts in the practice of politics,

religion, medicine and other aspects of African life. Many of the expressive genres examined deal with historical representation and political resistance. Therefore, this course provides insights into African history and politics through the creative representations of African artists.

ANTH410I - Identities 410I-3 Identities: Global Studies in Culture and Power. This course surveys recent studies of sociocultural identities based on ethnicity, class, race, gender, nationality, age, language, and other criteria, as aspects of broader struggles over power and meaning. Topics to be addressed are critical analyses of identity politics in the Americas, Europe, Middle East, Asia, and other regions; historical approaches to studying identities; and ethnographic studies of transnational and diasporic communities.

ANTH410K - Ecological Anthropology 410K-3 Ecological Anthropology. An examination of the relationship of past and present human populations in the context of their natural and social environments.

ANTH410L - Transcending Gender 410L-3 Transcending Gender. (Same as WGSS 410) How do humans become male and female in different societies? Can men become women and women become men? What other gender possibilities exist? Is male dominance universal? What are the sources of male and female power and resistance? Do women have a separate culture? What are the relationships between gender, militarism and war? These and other questions will be examined in cross-cultural perspective.

ANTH410M - Healing and Culture 410M-3 Healing and Culture. This course examines systems of healing and medicine from an anthropological perspective. The theory and practice of medicine in different cultures, including Western biomedicine, are considered. Particular attention is given to the ways in which medical knowledge gains legitimacy in different social contexts and the problems which arise in culturally heterogeneous arenas when different medical paradigms contend for legitimization.

ANTH410N - Anth of Popular Culture 410N-3 Anthropology of Popular Culture. An examination of recent approaches to popular culture, material culture and consumption in anthropology. Special topical focus will include sports, television and movies, food and shopping. The course will be organized around several fieldwork projects in the Carbondale community. Prerequisite: ANTH 240D recommended for undergraduates.

ANTH410O - Colonialism & Post-Colonialism 410O-3 Colonialism and Post-Colonialism. This course is designed to familiarize students with the experience of colonialism and the political, social, cultural implications of it. The analysis will not be limited to the study of the colonial period, but it will examine the complexities of contemporary post-colonial societies and cultures.

ANTH410P - Ethics and Research 410P-3 Ethics and Research. This course examines the risks that any anthropological research poses, both in fieldwork and writing, as well as questions and dilemmas that any social scientist should be aware of before getting involved in any research practice. Prerequisite: ANTH 240D recommended for undergraduates.

ANTH410Q - Food, Symbol and Society 410Q-3 Food, Symbol and Society. In this course we will explore all aspects of the social uses and symbolic meanings we attach to food and eating. How do we use food to make friends, to make enemies, and to make ourselves? What is changing in our food consumption patterns? What are some of the politics and the ethics involved in producing and marketing food? What is the significance of eating out? How do we analyze the smell and taste of food cross-culturally?

ANTH410R - Anth of Science & Technology 410R-3 Anthropology of Science and Technology. Technologies and scientific knowledge are commonly thought of as being universally applicable and as representations of truths about the operations of the world that are independent of culture. Anthropological studies, however, suggest that the efficacy of scientific knowledge and technologies is specific to the localities in which they are produced. This course introduces students to the primary concerns of the anthropology of science.

ANTH410S - Ethnographic Methods 410S-3 Ethnographic Research Methods. This course familiarizes students with the methods used by socio-cultural anthropologists to conduct ethnographies. Ethnographies are rich and detailed studies of people, communities, and practices that help us

understand the varying ways human beings engage their environments, structure the societies and spaces they live in, communicate with one another, make meaning, shape themselves in culturally distinct ways, and make technologies and material culture. To create ethnographic knowledge, ethnographers use a diverse tool kit including participant observation, ethnographic interviews, spatial analysis, archival research, and life histories, to name just a few. This class introduces students to these methods and also exposes them to the ethical, logistical, and theoretical complications of conducting ethnographic research.

ANTH410T - Anarchy/Egalitarianism 410T-3 Anarchy, Power and Egalitarianism: Anthropological Perspectives. This class considers anthropological evidence for and approaches to issues of power and rulership in relation to egalitarian or anarchist societies, that is, societies without arches (Greek for leaders/laws). We will look at how much societies function, what kinds of history and mythology they produce, how their exchange systems are elaborated, and why they have remained "under the radar" of the modern system of state societies. What can egalitarian/anarchist societies tell us about dominant assumptions about the nature of power and governance? How have ideas about "direct democracy" shaped new social and cultural practices? What is the relationship between these projects and movements and the larger societies in which they exist?

ANTH410U - Sustainability/Disasters 410U-3 Sustainability and Disasters. This course familiarizes students with anthropological knowledge on sustainability and disasters. Students will learn about the theoretical perspectives anthropologists use to understand the ways people define and enact sustainability and the social practices that lead to environmental degradation and catastrophes. The class also provides an introduction to classic anthropological studies on the two focal subjects, the methods social scientists use to generate scholarly knowledge about human-environment relationships, and the job opportunities available in this field for practicing anthropologists.

ANTH410V - Visual Anthropology 410V-3 Visual Anthropology. This seminar introduces students to the theories and methods of visual anthropology. Topics will vary semester-to-semester, ranging from methodologies used for ethnographic research of visual cultures, to critical analysis of photography and film/video as methodologies for ethnographic exposition.

ANTH412 - Visual Anthro Methods 412-3 Visual Anthropology as a Research Methodology. The new digital technologies provide exciting new ways to conduct anthropological research and present research findings. They also raise technical, methodological, and ethical questions for researchers. This course examines these issues through readings and analysis of examples of use of these media - digital video, still photography, and web authoring - in the field and in presentation to a scholarly and larger public.

ANTH415 - Sociolinguistics 415-3 Sociolinguistics. (Same as LING 415) History, methodology and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, pidgin and creole languages, and language planning.

ANTH416 - Spanish in the U.S.A. 416-3 Spanish in the U.S.A. (Same as LING 416) This course offers a survey of the historical, social, political, linguistic and educational issues surrounding the Spanish language in the United States. Topics to be addressed include Spanish language use and bilingualism, language maintenance and shift, education of Latino populations, Hispanic diversity, and Latino literature.

ANTH417 - Language Contact 417-3 Language Contact. (Same as LING 417) This course will introduce students to the social conditions under which language contact occurs and the cultural and linguistic consequences of such contact. Primary topics will be language maintenance and shift, ideologies and attitudes regarding bilingualism, and language development and change, using data from a variety of languages and cultures. Designed to provide a comprehensive background for research on bi- or multilingual settings. Prerequisite: one of the following: ANTH 240B, LING 200, LING 300, ANTH 500B or LING 505.

ANTH420 - Mayan Texts 420-3 Mayan Texts. Detailed examination of Mayan texts written in Mayan languages in their cultural contexts. Texts may range from pre-Columbian hieroglyphic texts, colonial Mayan texts, to modern texts.

ANTH421 - Descriptive Phonetic Phonology 421-3 Descriptive Phonetics and Phonology. The course introduces students to the study of phonetics and phonology from an anthropological and descriptive

perspective. The course is interested in how are sounds produced and how do they then become meaningful in languages? Special attention is paid to metrical phonology.

ANTH424 - Native American Verbal Art 424-3 Native American Verbal Art. (Same as ENGL 424) This class examines the oral traditions (story-telling, poetry, song, chant, etc.) of Native American Peoples. This class focuses on the way that Native American verbal art has been presented/represented by outsiders as well as on the formal features and forms of Native American verbal art. Attention is paid to the place and structure of verbal art in Native societies. This class focuses on the broad spectrum of verbal art in North America.

ANTH426 - Gender, Culture, Language 426-3 Gender, Culture and Language. (Same as WGSS 426 and LING 426) This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological- and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered language use.

ANTH428A - Language Culture Americas 428A-3 Languages and Cultures of the Americas-North America. (Same as ANTH 328A) This course studies the myriad of indigenous languages of the Americas. Focus is both descriptive and anthropological. Languages are considered with respect to their grammatical and discursive structures, historical relations, and their place within the sociocultural milieu of speakers. Areal focus is North America.

ANTH428B - Language Culture Americas 428B-3 Languages and Cultures of the Americas-Mesoamerica. (Same as ANTH 328B) This course studies the myriad of indigenous languages of the Americas. Focus is both descriptive and anthropological. Languages are considered with respect to their grammatical and discursive structures, historical relations, and their place within the sociocultural milieu of speakers. Areal focus is Mesoamerica.

ANTH428C - Language Culture Americas 428C-3 Languages and Cultures of the Americas-South America. (Same as ANTH 328C) This course studies the myriad of indigenous languages of the Americas. Focus is both descriptive and anthropological. Languages are considered with respect to their grammatical and discursive structures, historical relations, and their place within the sociocultural milieu of speakers. Areal focus is South America.

ANTH430A - Archaeology of North America 430A-3 Archaeology of North America. Detailed study of the early cultures of North America. Emphasis on the evolutionary cultural development of North America.

ANTH430B - Archaeology of Meso-America 430B-3 Archaeology of Meso-America. Detailed study of the early cultures of Meso-America with emphasis on the evolutionary cultural development of Meso-America.

ANTH430D - Art & Arch Mediterranean 430D-3-9 (3 per topic) Art and Archaeology of the Ancient Mediterranean. (Same as AD 310A, AD 310B, AD 310C, CLAS 310A, CLAS 310B, CLAS 310C, CLAS 310HA, CLAS 310HB, CLAS 310HC) An introduction to art historical, archaeological, and historical approaches to the physical remains of the ancient Mediterranean. Emphasis normally on Greece or Rome. Can be repeated if offered on different topics. Occasionally offered overseas. No prerequisites.

ANTH430E - Archaeology of Ancient Egypt 430E-3 Archaeology of Ancient Egypt. Detailed study of the early culture of ancient Egypt with emphasis on the evolutionary cultural development of Egypt. No prerequisites.

ANTH430F - Archaeology of S America 430F-3 Archaeology of South America. Survey of the prehistory and ethnohistory of South America, including the peopling of the South American continent, the development of early cultures, the rise and fall of Andean empires, and the impact of Spanish contact and conquest.

ANTH434 - Advanced Origins Civilization 434-3 Advanced Origins of Civilization. A survey of the major developments of the human past, culminating in the rise of cities and states. Areal coverage varies, but generally includes the ancient Near East, Mesoamerica, Andean South America, South Asia (India and Pakistan), and China. Graduate standing required.

ANTH440A - Fossil Evidence Hum Evol 440A-3 The Fossil Evidence for Human Evolution. An advanced consideration of the fossil evidence for human evolution and evaluation of the various theories regarding the course of human evolution.

ANTH440B - Race & Human Variation 440B-3 Race and Human Variation. A consideration of the range, meaning and significance of contemporary human biological variation, including evolutionary and adaptive implications and the utility of the race concept.

ANTH440C - Context Human Evolution 440C-3 Context of Human Evolution. This course will provide an ecological, behavioral, geological, geographic, and theoretical context from which to understand the evolutionary history of modern humans. The course is designed to complement ANTH 440A.

ANTH441A - Ceramics Lab 441A-3 Laboratory Analysis in Archaeology: Ceramics. Being durable, abundant, and full of information about food, social customs, styles, and even ideology, pottery provides a wealth of information about past societies. This course covers the major aspects of pottery analysis, including studies of raw materials, production techniques, function, and exchange. The course is partly lecture, partly lab-based.

ANTH441B - Archaeometry 441B-3 Laboratory Analysis in Archaeology: Archaeometry. This course surveys technical methods of the physical and natural sciences in archaeological analysis. Rather than focusing on a specific set of materials (as is done in the other courses in the ANTH 441 series), this course covers a broad spectrum of technical studies, including chronometry as well as the analysis of ceramics, metals, textiles, and ecofacts.

ANTH441C - Lithics Lab 441C-3 Laboratory Analysis in Archaeology: Lithics. This course provides an introduction to lithic analysis in archaeology. Students will be introduced to technological and functional analyses, typological studies, use-wear analysis, debitage analysis, and related subjects. The focus will be on chipped stone, but ground stone will also be considered. The overall goal is to show how lithic analysis can address broader anthropological questions.

ANTH442 - Working with Anth Collections 442-1 to 12 Working with Anthropological Collections. Management, curation, and analysis of anthropological collections as part of a research project created by the student. May be taken independently or as a follow-up to ANTH 450, 495, 496, 497, 596, or 597.

ANTH444 - Human Genetics & Demography 444-3 Human Genetics and Demography. A course in human genetics with an emphasis on population genetics and demography of modern and ancient human populations.

ANTH450A - Museum Studies-Learning 450A-3 Museum Studies - Learning in Museums. (Same as AD 450A) A detailed study of museum in the context of their use of exhibitions as an educational medium. Covers the evolution of the museum as a learning environment and the application of learning theory and principles in modern museums. Emphasis is placed on practicum experiences involving the design of learning experiences and educational programs in the museum setting.

ANTH450B - Museum Studies-Mthdlgy/Display 450B-3 Museum Studies - Methodology and Display. A detailed study of museums in the context of their use of exhibitions as an educational medium. Focus on the history of museum exhibitions and instruction in the fundamentals of educational exhibit design and curatorial research. Emphasis is placed on practicum experiences involving the design of educational exhibits and curatorial research. Laboratory/field trip fee: \$20.

ANTH450C - Museum Studies-Conservation 450C-3 Museum Studies: Conservation of Anthropological Collections. A study of the principles and methods used in the conservation of ethnographic and archaeological materials. The course examines strategies employed in the preservation of research collections, including preventative care, treatment, research, and documentation. Emphasis is placed on material identification, object use-life, and the chemistry of organic and inorganic materials relative to conservation practices.

ANTH455A - Dental Anthropology 455A-3 Dental Anthropology. Developmental origins of vertebrate teeth, anatomy and occlusal function, taxonomic and dietary aspects of the Primate dentition, detecting hominid origins; modern human odontology: genetics, pathology, forensic analysis. Much laboratory activity with materials.

ANTH455B - Special Topics Bioanth 455B-3 Special Topics in Biological Anthropology. (May be repeated once for a maximum of 6 hours.) This course will cover special topics in Biological (Physical) Anthropology. Topics will vary between offerings and may include special or current issues in forensic research, human variation, genetics and evolution, primate behavior, ecology, conservation, or human evolution.

ANTH455C - Primate Behavior & Ecology 455C-3 Primate Behavior and Ecology. Advanced study of the behavior and ecology of living nonhuman primates. The course will cover the geographic distribution and basic ecological features of nonhuman primates and the relationships between resource distribution, social organization, mating system and behavior which will help to reconstruct the evolution of nonhuman and human primate sociality.

ANTH455D - Quantitative Methods 455D-3 Quantitative Methods. Classic inferential statistics as well as resampling approaches and pattern recognition philosophy: chi square, t test, ANOVA, correlation and regression, nonparametric versus parametric methods, multiple regression, all involving diverse anthropological data examples. This course in combination with Ed Psych 506 or other approved substitute satisfies a doctoral tool requirement. Does not count as a bioanthropology elective toward the M.A. degree.

ANTH455E - Biomedical Anthropology 455E-3 Biomedical Anthropology. Biological disorders and maladaptation in the human species. Major themes include epidemiological methods, the modern Epidemiological Transition to "Western" disease patterns, other transitions resulting from "discordant adaptation," diet, the relation to sociomedical anthropology, and the evolution of human disease (including osteological paleopathology) from Paleolithic to industrialized contexts.

ANTH455F - Nutritional Anthropology 455F-3 Nutritional Anthropology. The anthropological investigation of diet and nutrition in past and present human populations. This course investigates the diets of our human ancestors, human food revolutions, methods used to evaluate diet and nutrition in past human populations, and contemporary issues in food production and distribution.

ANTH455G - Primate Biology & Evolution 455G-3 Primate Biology and Evolution. Advanced study of primate biology, evolution, and systematics, with special emphasis on primate functional anatomy and dentition. The course will cover the taxonomy of primates, the evolution of the primate radiation and primate origins, and biological features which elucidate primate relationships and help to reconstruct behavior and ecology of extinct primates.

ANTH455H - Osteology 455H-3 Osteology. This lab-based course is for the advanced student interested in the analysis of the human skeleton. An intensive study of human skeletal anatomy, the methods used in the identification and analysis of skeletal remains in archaeological contexts, and osteological evidence for disease, diet, and trauma in past populations.

ANTH455I - Primate Comp Funct Anatomy 455I-3 Comparative and Functional Primate Anatomy. Advanced study of the functional anatomy of primates with a strong emphasis on primate osteology. The course will compare biology of living primates, including humans, to elucidate adaptations in anatomy of nonhuman primates and to better understand the origins and specific anatomical adaptations in the human lineage.

ANTH456 - Forensic Taphonomy 456-3 Forensic Taphonomy. Critical to the successful forensic anthropological analysis of human remains is an understanding of the events and processes that affect decomposition of biological tissues. This course is designed to teach students about a variety of process affecting decomposition of human tissues, including (but, not limited to) animal scavenging, insect activity, environmental conditions, personal characteristics of the deceased and human vectors (dismemberment, burning, burial, etc.). Prerequisite: ANTH 231 OR ANTH 455H.

ANTH460 - Individual Study in Anthro 460-1 to 12 Individual Study in Anthropology. Guided research on anthropological problems. The academic work may be done on campus or in conjunction with approved off-campus (normally field research) activities. Special approval needed from the instructor.

ANTH465 - Internship 465-3 to 9 Internship. For anthropology majors only. This provides a supervised experience in a professional setting. Not for graduate credit. Special approval needed from the department.

ANTH470A - People & Cultures Africa 470A-3 People and Cultures-Africa. (Same as ANTH 310A) A survey of the prehistory, cultural history, and modern cultures of peoples in Africa.

ANTH470D - People & Cultures Europe 470D-3 People and Cultures-Europe. (Same as ANTH 310D) A survey of the prehistory, cultural history, and modern cultures of peoples in Europe.

ANTH470E - Peoples & Cultures S Amer 470E-3 People and Cultures-South America. (Same as ANTH 310E) A survey of the prehistory, cultural history, and modern cultures of peoples in South America.

ANTH470G - Peoples & Culture N Amer 470G-3 People and Cultures-North America. (Same as ANTH 310G) A survey of the prehistory, cultural history, and modern cultures of peoples in North America.

ANTH470I - People & Cultures Mesoamerica 470I-3 People and Cultures-Mesoamerica. (Same as ANTH 310I) A survey of the prehistory, cultural history, and modern cultures of peoples in Mesoamerica.

ANTH470K - People & Cultures Southwest 470K-3 People and Cultures-Native Peoples-Southwest. (Same as ANTH 310K) A survey of the prehistory, cultural history, and modern cultures of the Native Peoples of the American Southwest.

ANTH480 - Senior Seminar 480-3 Senior Seminar. Readings and discussion concerning major issues in the study of humankind, with an emphasis on anthropological writing. Not open to graduate students or non-majors. Fulfills the Writing-Across-the-Curriculum requirement. Prerequisite: ANTH 240A,B,C,D.

ANTH484 - Internship:Curation Arch Colls 484-1 to 9 Internship: Curation of Archaeological Collections. This internship is intended to introduce students to the management of archaeological collections through hands-on work with materials, typically those housed at the Center for Archaeological Investigations' curation facility. Students will be exposed to a variety of issues that affect local, state, and national curation facilities such as conservation, preservation, accessibility, accountability, and ethical concerns. Internship projects range from collections documentation and research to object digitalization and other special curation projects. Special approval needed from the instructor to register.

ANTH485 - Special Topics in Anthro 485-3 to 9 Special Topics in Anthropology. Selected advanced topics in anthropology. Topics vary and are announced in advance. May be repeated as the topic varies. Special approval needed from the instructor.

ANTH490 - Field Mthds Analysis Ling Anth 490-3 Field Methods and Analysis in Linguistic Anthropology. Includes theoretical background and a project in the linguistic aspects of culture. Prerequisite: ANTH 240B or consent of instructor.

ANTH495 - Ethnographic Field School 495-3 to 8 Ethnographic Field School. Apprentice training in the field in ethnographic theory and method. Students will be expected to devote full time to the field school. Special approval needed from the instructor.

ANTH496 - Field School in Archaeology 496-1 to 12 Field School in Archaeology. Apprentice training in the field in archaeological method and theory. Students will be expected to be in full-time residence at the field school headquarters off campus. Special approval needed from the instructor. Students will be charged a \$50 fee for supplies.

ANTH497 - Bioarchaeology Field School 497-3 to 6 Field School in Bioarchaeology. This course offers training in archaeological field techniques related to the excavation and analysis of human skeletal remains. Students are expected to be in full-time residence at the field school site, which may involve international travel. Offered during the summer. Special approval needed from the instructor.

ANTH499 - Honors Thesis 499-3 Honors Thesis. Directed reading and field or library research. The student will write a thesis paper based on original research. Not for graduate students. Special approval needed from the department.

ANTH500A - Theory/Method in Biol Anth 500A-3 Theory and Method in Biological Anthropology. Current topics in biological evolution and variation, including the theoretical and methodological background to each. Topics will be drawn from the four major areas of physical anthropology: genetics and evolutionary theory, primate studies, human fossil record and human variation. Special approval needed from the instructor.

ANTH500B - Theory/Method in Ling Anth 500B-3 Theory and Method in Linguistic Anthropology. Overview to enable students to identify, describe and understand the theories, methods and goals of linguistic anthropology. Emphasis is placed on the relationships of language to culture and cognition from an anthropological perspective. Topics include language origins, descriptive linguistics, language and cognition, synchronic and diachronic variation, language use in cultural context, discourse and pragmatics, writing systems and literacy. Special approval needed from the instructor.

ANTH500C - Theory/Method in Archaeology 500C-3 Theory and Method in Archaeology. Overview of the currents and controversies in anthropological archaeology in their historical and theoretical context. Topics include history of archaeological theory, explanation in archaeology, limitations of the archaeological record and archaeological approaches to the study of cultural variation. Special approval needed from the instructor.

ANTH500D - Theory/Methods Sociocult Anth 500D-3 Theory and Methods in Sociocultural Anthropology. This course is designed to enable students to identify, define and critically understand the major theories and methods of contemporary sociocultural anthropology. The course is organized into three general parts, reflecting broad areas of theoretical inquiry which have expanded most rapidly in anthropology since 1960: (1) ecological, economic and other materialist approaches; (2) cognitive, symbolic and other interpretive approaches; and (3) recent and ongoing research strategies, including critical and historical approaches. Special approval needed from the instructor.

ANTH500E - History of Anthropol Theory 500E-3 History of Anthropological Theory. Covers history of pre-20th century social theory and a survey of 20th century theories in socio-cultural anthropology. Topics include: Enlightenment social theory, social evolutionism, racial formalism and the Boasian critique, relativism and functionalism; cultural materialism, cultural ecology, neo-evolutionism, ecological anthropology, structuralism, ethnohistory, interpretive anthropology, practice theory, post-modernism, and gender theory. Special approval needed from the instructor.

ANTH501 - Practicum Educ Anthropology 501-(3-6, 3 per semester) Practicum in Educational Anthropology. This practicum provides anthropology PhD students actual classroom experience in a lower division anthropology course. Students will be involved in the teaching of designated courses. Faculty will meet with practicum members on a regular basis, critique their lectures, and together with them work out problems and plan future directions of the course. Graded S/U only. Restricted to anthropology doctoral students only.

ANTH510 - Sem Arch North America 510-3 to 9 (3 per topic) Seminar Archaeology of North America. Seminar studying issues concerning the prehistoric and historic inhabitants of North America north of Mexico. From year to year, the precise areal and topical coverage will vary, as will the instructors. Students should consult department about subjects to be offered.

ANTH511 - Sem Meso-American Arch 511-2 to 9 (2 to 3 per topic) Seminar in Meso-American Archaeology. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

ANTH513 - Seminar in Archaeology 513-3 to 9 (3 per topic) Seminar in Archaeology. Seminars in varying topics in archaeology. Students should consult department about subjects to be covered.

ANTH514 - Sem S American Arch 514-3 to 9 (3 per topic) Seminar in South American Archaeology. Seminar will focus upon archaeological investigations of specific cultures, regions, time periods or cultural processes in South America. From year to year the areal and topical coverage of the course will vary, as may the instructor. Students should consult the department about subjects to be covered. Prerequisite: ANTH 430F, 500C, 500D or 500E or consent of instructor.

ANTH515A - Seminar Sociocultural Anth 515A-3 to 9 (3 per topic) Seminar in Sociocultural Anthropology. Advanced seminar on theoretical perspectives in the social sciences and humanities.

Topical focus will vary from year-to-year. Course may be taken again as topics vary. Extensive readings are drawn from a wide range of sources.

ANTH515B - Seminar Sociocultural 515B-3 to 9 Seminar in Sociocultural Anthropology. Intensive analysis of a limited set of monographs organized around a theoretical problem or set of problems.

ANTH516 - Sem Complex Societies 516-3 to 9 (3 per topic) Seminar in the Archaeology of Complex Societies. Seminar reviews selective literatures dealing with theoretical and methodological issues in archaeological investigation of pre-industrial, regional complex societies. From year to year the topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be offered. Prerequisite: ANTH 500C, 500D or 500E; or consent of the instructor.

ANTH520 - Seminar New World Ethnol 520-2 to 6 (2 to 3 per topic) Seminar in New World Ethnology. From year to year, the areal and topical coverage of this course will vary, as will instructors. Students should consult the department about subjects to be covered.

ANTH521 - Seminar Ethno Latin Amer 521-2 to 6 (2 to 3 per topic) Seminar in Ethnology of Latin America. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

ANTH522 - Seminar Anth of Oceania 522-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Oceania. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

ANTH523 - Seminar Anth of Africa 523-2 to 6 (2 to 3 per topic) Seminar in Anthropology of Africa. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

ANTH525 - Theorizing the Body 525-3 Theorizing the Body. (Same as WGSS 525) This seminar explores a broad range of theoretical readings centering on the human body. Once the province of medical science and certain schools of philosophy, recent research in the social sciences and the humanities position "the body" as a primary site of socialization, gendering, social control.

ANTH527 - Seminar in Gender 527-3-9 Seminar in Gender. An advanced seminar in anthropological approaches to gender. Theoretical and topical approaches will vary from semester to semester. In any given semester topics may include: power, agency, ethnographies of gender, the construction of masculinity/femininity, gender diversity, gender and the state, gender and everyday. Prerequisite: ANTH 500D or consent of instructor.

ANTH528 - Culture and Materiality 528-3 Seminar in Culture and Materiality. An advanced seminar in anthropological approaches to culture and materiality. Theoretical and topical approaches will vary depending on the instructor and semester. In any given semester topics may include: Human and non-human agency, the social and the technological, science studies, production and consumption, human-environment relations, the role of the senses in culture, and knowledge, skill and practice. Prerequisite: ANTH 500D or consent of the instructor.

ANTH530 - Seminar in Paleoanthro 530-3 to 9 (3 per topic) Seminar in Paleoanthropology. Topics will be drawn from any dealing with the fossil and/or contextual evidence for human evolution (e.g., The Place of Neandertals in Human Evolution; Taphonomy and Paleoecology; Origins of Bipedalism). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

ANTH531 - Bioarchaeology 531-3 to 9 Seminar in Bioarchaeology. Seminars will focus on theoretical and methodological issues relating to the excavation and analysis of human skeletal remains. From semester to semester, The topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

ANTH532 - Seminar Hum Biol Variat 532-3 to 9 (3 per topic) Seminar in Human Biological Variation. Topics will be drawn from any of the areas of biological variation among humans (e.g., Comparative Epidemiology, Human Sociobiology, Demography and Paleodemography, or Multivariate Pattern

Recognition). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

ANTH534 - Seminar Evolution Theory 534-3 to 9 (3 per topic) Seminar in Evolutionary Theory. Seminars will be constructed around various theoretical and/or substantive issues in current biological evolutionary theory (e.g., Issues in Paleobiology, Evolution At and Above the Species Level or Phylogenetic Systematics). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

ANTH536 - Seminar Primate Behav/Ecology 536-3 to 9 (3 per topic) Seminar in Primate Behavior and Ecology. Topics will vary among theoretical and substantive issues in primate behavior and ecology (e.g., Primate Social Structure, Socioecology, Diet, Locomotion and Foraging Strategies, or Reproductive Strategies in Primates). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

ANTH538 - Seminar Primate Evolution 538-3 to 9 (3 per topic) Seminar in Primate Evolution. Topics will vary among substantive (taxonomic), theoretical, and contextual issues in primate evolution (e.g., Catarrhine Evolution, Anthropoid Origins, Molecular vs. Fossil Evidence for Hominoid Phylogeny or The Role of Body Size and Allometry in Primate Evolution). From semester to semester, the topical coverage will vary, as will instructor.

ANTH544 - Discourse Analysis 544-3 Discourse Analysis. (Same as LING 544) Survey of major approaches to the analysis of spoken or written discourse including speech act theory, pragmatics, interactional sociolinguistics, ethnography of communication, conversation analysis, variation analysis and critical discourse analysis.

ANTH545 - Seminar in Linguistics 545-2 to 6 (2 to 3 per topic) Seminar in Anthropological Linguistics. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

ANTH546 - Language, Gender, Sexuality 546-3 Language, Gender and Sexuality: Anthropological Approaches. (Same as LING 545, WGSS 546) This course examines the study of language in society with a particular focus on how linguistic practices are part of the construction of gender and sexual identities, ideologies, social categories and discourses. Anthropological theories applied to the study of language, gender and sexuality will be covered along with a variety of methodological approaches.

ANTH548 - Linguistic Anth of Education 548-3 The Linguistic Anthropology of Education. (Same as LING 548) This course examines the role of language in education through a critical anthropological lens, examining educational institutions across cultures and times. Topics to be covered include the teaching of literacy, language policies and ideologies in education, the linguistic construction of identities in school settings (including national, ethnic, gender, sexuality, age, religious and social class identities) and modes of intervention to improve educational endeavors. Ethnographic studies of education in a variety of national, cultural and linguistic contexts will be covered, as well as other discourse analysis approaches to the study of educational processes and institutions. The course is designed to bring together a wide range of material of interest to graduate students in anthropology, linguistics, education and other related fields.

ANTH551 - Pragmatics 551-3 Pragmatics. (Same as LING 551) An investigation of language use in context; this incorporates both social and psychological aspects of language use. Topics to be covered in this course include speech acts; implicature; conversation analysis; and the acquisition of communicative competence by both first and second language learners. Prerequisite: ANTH 500B or LING 505.

ANTH554 - Evolution Seminar 554-1 to 4 (1 per semester) Evolution Seminar. (Same as MBMB 554, PLB 554) Advanced topics in evolutionary biology including genetics & development, evolutionary ecology, phylogeny, paleontology, biogeography, population genetics, molecular ecology, speciation, molecular evolution, and macroevolution. Topics will vary each semester. Seminar format with group discussions and student presentations. Graded S/U. Special approval needed from the instructor.

ANTH555 - Curation Biol Collection 555-3 Curation of Biological Collections. (Same as ZOOL 555) An overview of the organization and operation of modern collections involving animal, plant, and microbial

specimens. Topics include specimen preparation and curation, collection databases, specimen-collection laws, and field-collection techniques. Special approval needed from the instructor.

ANTH556 - Phylogenetics 556-3 Phylogenetics. (Same as MBMB 556, PLB 556, and ZOOL 556)

An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypotheses. Special approval needed from the instructor.

ANTH560 - Seminar Comp Social Orgz 560-2 to 6 (2 to 3 per topic) Seminar in Comparative Social Organization. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

ANTH567 - Seminar Theory & Method 567-2 to 6 (2 to 3 per topic) Seminar in Anthropological Theory and Method. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

ANTH568 - Sem Analyt Methods Arch 568-3 to 12 (3 per topic) Seminar in Analytical Methods in Archaeology. Seminar in definition, measurement and description of data in relation to archaeological research problems. From year to year, the topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be offered. Special approval needed from the instructor.

ANTH576 - Seminar Reserch Design 576-2 to 6 (2 to 3 per topic) Seminar in Anthropological Research Design. Supervised training in the preparation of anthropological research designs. Requirements will include completed research proposals involving the relation of data to theory and results in the general sub-areas of archaeological, physical, social and linguistic anthropology. Coverage will vary. Students should consult the department.

ANTH580 - Topics in Evolution 580-1 Current Topics in Evolution. (Same as MBMB 580, ZOOL 580) The Evolution Discussion Group meets weekly throughout the year to discuss current evolutionary literature and the research of participants. All students and faculty with an interest in evolutionary biology are welcomed to participate.

ANTH581 - Seminar in Anthropology 581-2 to 6 (2 to 3 per topic) Seminar in Anthropology. From year to year, the areal and topical coverage of this course will vary, as will the instructor. Students should consult the department about subjects to be covered.

ANTH585 - Readings in Anthropology 585-1 to 12 (1 to 3 per semester) Readings in Anthropology. Guided readings to cover special topics and fill gaps in the student's specialized anthropological background in preparation for PH.D. candidacy examination, to be arranged with department. Graded S/U. Restricted to doctoral students only. Special approval needed from the instructor.

ANTH590 - Internship 590-3 Internship. This provides a supervised experience in a professional setting, generally entailing supervisory, editorial, and/or administrative duties. Special approval needed from the instructor.

ANTH595 - Field Methods Ethnology 595-3-6 Field Methods in Ethnology. Anthropological methods of inquiry and documentation of cultures and habitat together with appropriate instruction in the technique of field work such as photography and sound recording. Special approval needed from the instructor.

ANTH596 - Adv Field Methods in Arch 596-6 to 18 Advanced Field Methods in Archaeology. Advanced, hands-on training in the field of archaeological method and theory. Graduate students will have extended training in supervisory and documentation tasks and roles, in addition to other field training. Students will be expected to be in residence at the field school headquarters off campus for the entire field season. Prerequisite: ANTH 496 or consent of instructor.

ANTH597 - Fieldwork in Anthropology 597-1 to 12 Fieldwork in Anthropology. To be arranged with department. Graded S/U only.

ANTH598 - Accelerated Thesis 598-1 to 9 Accelerated Thesis. This course is restricted to students to be accelerated from the M.A. to the Ph.D. program (at the discretion of the faculty). Its purpose is to

allow the student, under the guidance of his/her major advisor, to complete the research paper and other requirements of an M.A. degree. Graded S/U only. Special approval needed from the department and departmental offer of accelerated entry to Ph.D. program in Anthropology.

ANTH599 - Thesis 599-1 to 6 Thesis. Special approval needed from the instructor.

ANTH600 - Dissertation 600-1 to 32 (1 to 12 per semester) Dissertation. Special approval needed from the instructor.

ANTH601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

ANTH699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Anthropology Faculty

Adams, Jane, Professor, Emerita, Ph.D., University of Illinois, 1987.
Bachman, Dona R., Adjunct Assistant Professor, Ph.D., Northern Illinois University, 1979.
Balkansky, Andrew K., Professor, Ph.D., University of Wisconsin, Madison, 1997.
Barrios, Roberto E., Associate Professor, Ph.D., University of Florida, 2004.
Butler, Brian M., Adjunct Professor, Emeritus, Ph.D., Southern Illinois University, 1977.
Ciubrinskas, Vytis, Adjunct Assistant Professor, Ph.D., Vilnius University, 1993.
Corruccini, Robert S., Distinguished Professor, Emeritus, Ph.D., University of California at Berkeley, 1975.
Croissier, Michelle M., Visiting Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign, 2007.
Dabbs, Grethen R., Assistant Professor, Ph.D., University of Arkansas, 2009.
DeHoet, Robert, Adjunct Instructor, M.F.A., University of Iowa, 1984.
Emoto, Tomomi (Jimee Choi), Adjunct Assistant Professor, Ph.D., Southern Illinois University, 2008.
Ford, Susan M., Professor, Ph.D., University of Pittsburgh, 1980.
Fuller, Janet M., Professor, Ph.D., University of South Carolina, 1997.
Gumerman, George J., Distinguished Professor, Emeritus, Ph.D., University of Arizona, 1969.
Handler, Jerome S., Distinguished Professor, Emeritus, Ph.D., Brandeis University, 1965.
Hardenbergh, Sabrina H. B., Adjunct Assistant Professor, Ph.D., University of Massachusetts, Amherst, 1993.
Hill, Jonathan, Professor, Ph.D., Indiana University, 1983.
Hofling, C. Andrew, Professor, Ph.D., Washington University, 1982.
Lapham, Heather A., Adjunct Associate Professor, Ph.D., University of Virginia, 2002.
Maring, Ester G., Assistant Professor, Emerita, Ph.D., Indiana University, 1969.
Maring, Joel M., Associate Professor, Emeritus, Ph.D., Indiana University, 1967.
McCall, John C., Associate Professor, Ph.D., Indiana University, 1992.
Montenegro, Jorge A., Adjunct Assistant Professor, Ph.D., Southern Illinois University, 2010.
Muller, Jon D., Professor, Emeritus, Ph.D., Harvard University, 1967.
Reichard, Ulrich H., Associate Professor, Ph.D., Georg-August University, Göttingen, Germany, 1995.
Rice, Don S., Professor, Emeritus, Ph.D., Pennsylvania State University, 1976.
Rice, Prudence M., Distinguished Professor, Emerita, Ph.D., Pennsylvania State University, 1976.
Riley, Carroll L., Distinguished Professor, Emeritus, Ph.D., University of New Mexico, 1952.
Rodriguez, Juan Luis, Adjunct Assistant Professor, Ph.D., Southern Illinois University, 2011.
Shimada, Izumi, Distinguished Professor, Ph.D., University of Arizona, 1976.
Steinbrink, Nate, Adjunct Instructor, M.F.A., Southern Illinois University Carbondale, 2005.
Sutton, David, Professor, Ph.D., University of Chicago, 1995.
Webster, Anthony K., Associate Professor, Ph.D., University of Texas at Austin, 2004.
Welch, Paul D., Associate Professor, Ph.D., University of Michigan, 1986.

Architectural Studies

The most basic human response to the earth's environment has been the development of methods which increase the probability of survival. The most obvious of these was the creation of shelters by which the impact of climate and the changing seasons could be controlled. From this simple reaction, architecture has evolved which reflects and promotes the cultural, economic and philosophical trends of our societies.

The four-year curriculum in architectural studies offers the beginning level of education for those who intend to pursue a career in this profession or a related field. A structured sequencing of courses is included which provides for a gradual interactive development of required knowledge and skills. This pre-professional preparation is combined with the University Core Curriculum courses to provide a comprehensive scholarly foundation for advancement.

The Bachelor of Science in Architectural Studies (BSAS) is a four-year pre-professional program that prepares graduates for careers in architecture and related fields or to enter masters level programs. In addition, the School of Architecture offers a 1.5 year Master of Architecture (MArch) degree that is accredited by the National Architectural Accrediting Board (NAAB). The BSAS degree combined with the MArch degree is designed to fulfill accreditation requirements. In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards. Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree. The NAAB grants candidacy status to new programs that have developed viable plans for achieving initial accreditation. Candidacy status indicates that a program should be accredited within six years of achieving candidacy, if its plan is properly implemented. Graduates with a BSAS degree are prepared for entry-level positions in architecture and related fields at a limited level. Ultimately, most graduates will continue their education in a professional-level Master of Architecture program in order to satisfy education requirements for licensure.

Students also are eligible for participation in the Architectural Experience Program (AXP) sponsored by the National Council of Architectural Registration Boards. A wide variety of employment options exist. Some areas include design, planning, preservation, government regulation, construction, building products and facilities management.

The amount of material to be covered, the fast pace of assignments, and the pressure of critical reviews combine to produce a highly charged and energetic atmosphere. Successful students must be able to handle multiple projects simultaneously and demonstrate an ability to manage their time wisely.

To support students in their educational endeavors, sophomores, juniors and seniors are provided dedicated studio space. Program facilities include a resource library, model/furniture shop, a dedicated computer graphics laboratory, a digital fabrication lab, and virtual reality facilities. The computer graphics laboratory will provide access to input/output devices. Each student is required to purchase or lease a laptop computer and software that meets program specifications prior to the start of the second year for those on the four-year plan or prior to the start of the first year for those on the three-year plan. Laptop and software specifications will be supplied during the registration process.

While facilities are provided for use, cost for supplies, individual equipment and field trips necessary to the successful completion of the program are borne by the student. Due to variation in individual materials used, it is impossible to predict the exact costs for each student. A reasonable estimate of additional expenses is in the range of \$1,000 to \$2,000 per academic year.

The Architectural Studies program maintains the right to retain student work for exhibition or for records and accreditation purposes. Students are advised to assemble photographic and digital files of their work for their portfolios.

Students are encouraged to participate in professional related student organizations, which include the American Institute of Architecture Students, Construction Specifications Institute, and Illuminating Engineering Society. Additional activities designed to enhance the overall quality of education include the University Honors Program, travel study programs, workshops and guest lectures.

Prospective students attending another college or university prior to transferring to Southern Illinois University Carbondale should concentrate on completing courses articulated or approved as substitutes for Southern Illinois University Carbondale's University Core Curriculum requirements. Prior to taking courses that appear to equate to the professional sequence, the applicant should consult with the school director or designated representative.

Students must pass all Architectural Studies prefix courses with a minimum grade of C- in order to satisfy prerequisites and to graduate. If a student receives a grade of F three times in the same course, the course cannot be taken again. Students cannot repeat Architectural Studies Prefix courses in which they received a grade of C or better.

Construction Management and Operations Minor and Specialization

A minor in Construction Management consists of a minimum of 15 semester hours, including ARC 210, ARC 310, ARC 410, ARC 411, and ARC 413. ARC 210 and ARC 310 are prerequisites that must be satisfied before taking the upper division 400-level courses. An advisor within the School of Architecture must be consulted before selecting this field as a minor.

The specialization in Construction Management and Operations in the Bachelor of Science in Architectural Studies prepares students for careers in commercial and industrial construction management. The program builds on the School of Architecture's foundational disciplines in building design and construction. Courses required for specialization include: ARC 210, ARC 310, ARC 410, ARC 411, ARC 412, ARC 413 and TRM 332, TRM 362, TRM 364, TRM 383, and TRM 416. See an advisor. Students must earn a minimum grade of C- in each course taken to satisfy the requirements of the minor, and students must earn a minimum grade point average of 2.0 for those minor courses.

Bachelor of Science Degree in Architectural Studies, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
University Core Curriculum - As per University requirements for baccalaureate degrees, but must include HIST 101A,B. ¹	39
Requirements for Major in Architectural Studies	(9) + 87
MATH 111 ²	(3) + 1
PHYS 203A	3
PHYS 253A	1
HORT 328A, HORT 328B	(2) + 2
Electives	9
ARC 121, ARC 122, ARC 231, ARC 232, ARC 242, ARC 251, ARC 252, ARC 271, ARC 341, ARC 342, ARC 351, ARC 352, ARC 361, ARC 362, ARC 381, ARC 451, ARC 452, ARC 462, ARC 481, ARC 482	(3) + 72

Degree Requirements	Credit Hours
Total	120

1 ARC 231, ARC 232, PHYS 203A and MATH 111 will apply toward nine hours of University Core Curriculum requirements making a total of 39 in that area.

2 MATH 108 and MATH 109 substitute for MATH 111. Hours will be (3) + 3. Total hours for the degree remains 126 when the extra hours are counted as an architecture elective.

Architectural Studies Courses

ARC121 - Design Communication I 121-4 Design Communication I. (Same as ID 121) Introduction to basic drawing and graphic modeling for interior design, architecture, and graphic communication. Instruction in two- and three-dimensional visualization of form and space. Topics: freehand drawing and drafting skills, orthographic projection, shade and shadow, paraline drawing, sketching, drawing and projection composition, and perspective geometry and projection. Restricted to Architectural Studies and Interior Design majors. Studio Fee: \$48.

ARC122 - Design Communication II 122-4 Design Communication II. (Same as ID 122) Continuation of Design Communication I. This course is a continuation of sketching and black and white drawing techniques. The introduction of color and color presentation techniques with emphasis on advanced interior design and architectural graphics and presentation composition. Prerequisite: ARC 121 or ID 121. Restricted to Architectural Studies and Interior Design majors. Studio Fee: \$48.

ARC199 - Individual Study 199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Special approval needed from the sponsor and school director.

ARC210 - Intro to Profession 210-3 Construction Management and Operations: Introduction to the Profession. Initial course in Construction Management and Operations (COMO) specialization series for the BSAS curriculum. Participants will develop an understanding of the wide range of opportunities for COMO, explore applicable standards of practice, industry-based code of ethics, interact with allied and associated organizations, identify certification requirements, and understand the technical challenges of COMO.

ARC231 - Architectural History I 231-3 Architectural History I. (Same as ID 231) (Advanced University Core Curriculum Course) The study of the influences and the development of architecture from prehistoric to the 19th Century, in particular, the study of structure, aesthetics, and the language of architecture. With 232-Architectural History II, satisfies Core Curriculum Fine Arts requirement. Restricted to major in Architectural Studies.

ARC232 - Architectural History II 232-3 Architectural History II. (Same as ID 232) (Advanced University Core Curriculum Course) Course covers development of modern architecture and urban planning from the 19th Century to the present, and includes American, British and Continental architecture and urban planning and influences of Eastern Architecture and design. With 231-Architectural History I, satisfies Core Curriculum Fine Arts requirement. Prerequisite: ARC 231. Restricted to major in Architectural Studies.

ARC242 - Building Tech I: Wood 242-3 Building Technology I: Wood. (Same as ID 242) Introduction to basic materials, components, processes, theories, and means of assembly of light wood frame construction. Building of full-scale projects on an off campus requiring the fabrication of wood structures with appropriate tools and equipment. Preparation of working drawings in light wood frame construction using BIM software. Prerequisite: ARC 122, 271. Restricted to major. Studio fee: \$36.

ARC251 - Design I: Concept 251-4 Design I: Concept. (Same as ID 251) Introduction to the basic principles and elements of design by means of practical and abstract applications. Development of two-

and three-dimensional solutions and presentations for conceptual design problems. Emphasis is on three-dimensional thinking and communication. Prerequisite: ARC 122. Restricted to Architectural Studies and Interior Design majors. Studio fee: \$48.

ARC252 - Design II: Order 252-4 Design II: Order. (Same as ID 252) A series of studio exercises to develop an understanding of the use of a model for structuring design information, fundamentals of programming, research, communication skills and the design process. This course is designed to satisfy the writing portion of the Communication-Across-the-Curriculum requirements. Prerequisites: ARC 251, 271 and ENGL 101. Restricted to Architectural Studies and Interior Design majors. Studio fee: \$48.

ARC258 - Work Experience 258-1 to 30 Work Experience Credit. Credit granted for job skills, management-worker relations, and supervisor experience for past work experience while employed in industry, business, the profession, or service occupations. Credit will be established by school director evaluation. Restricted to major.

ARC259 - Occupational Education 259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by school director evaluation. This credit may only be applied at the 100- and 200-level for the architectural studies degree unless otherwise determined by the director. Restricted to major.

ARC271 - Computers in Architecture 271-3 Computers in Architecture. (Same as ID 271) This course serves as an introduction to various electronic media employed within the practice of interior design and architecture. Creative and effective skills in the use of computers in interior design and architecture applications are consistently stressed. Restricted to major.

ARC299 - Individual Study 299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Special approval needed from the sponsor and school director.

ARC310 - Program Management 310-3 Construction Management and Operations: Program Management. Explore project scope and delivery methods, compensation, forms, contract types during program phase, pre-design, and pre-construction management. Identify importance of contract delivery, administration, documentation, and control across all project phases from concept through facilities management and de-construction. Project performance, stakeholder decisions, documentation tools, and applications are examined.

ARC314I - Expressions in Architecture 314I-3 Expressions in Architecture. (University Core Curriculum) A study of the interconnected nature of the arts, history, environmental psychology, and architecture using the built environment as the foundation for the study. Students will learn to critically examine the built environment by learning how architecture expresses human cultures, social structures, economic and political status, and spiritual beliefs.

ARC319 - Occupational Internship 319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail. Restricted to major in architectural studies. Special approval needed from the instructor.

ARC320 - Architectural Co-op Education 320-1 to 12 Architectural Cooperative Education. The student will participate in an Architectural Studies approved cooperative education program that includes formal instruction, training and/or career related work experiences. Students receive a salary or wages and engage in pre-arranged assignments related to their academic program and career objectives. Program faculty evaluations, cooperative agency student performance evaluations and student reports are required. Cooperative experience may be in one or more of the following broad areas: (a) schematic design, (b) design development, (c) construction documents, (d) bidding or negotiations, (e) construction administration. Hours and credit to be individually arranged. Restricted to major in architectural studies. Special approval needed from the instructor.

ARC341 - Build Tech II: Msnry & Concrete 341-4 Building Technology II: Masonry and Concrete. Continuing study of materials and practices in document preparation for buildings using masonry and reinforced concrete construction. Investigation and use of local, state and federal codes regulating health and safety. Investigation of construction techniques relating to criteria of permanence, low maintenance and budget requirements. Produce a set of working drawings for a two-level, light commercial/industrial building. Prerequisite: ARC 242. Restricted to major. Studio fee: \$48.

ARC342 - Build Technology III: Steel 342-4 Building Technology III: Steel. Correlation of the design development and construction documents phases of a building project. Development of the project from design development through construction drawing phases with appropriate drawings required for each phase. Prerequisite: ARC 242. Restricted to major. Studio fee: \$48.

ARC350 - Technical Career Subjects 350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Special approval needed from the instructor and school director.

ARC351 - Design III: Context 351-5 Design III: Context. Continuing study of architectural design. Projects of increased scope and complexity. Continue design process study (synthesis) and appropriate design presentation (communication). Working with impingement introduced by external agencies such as social, government, and community, as part of a larger context of planning. Study of the impact of site development, for on-site as well as external, contextual issues. Prerequisite: ARC 252. Restricted to major. Studio fee: \$60.

ARC352 - Design IV: Complexity 352-5 Design IV: Complexity. Completion of complex design projects in varied environmental settings. Rapidly paced projects designed to provide the maximum exposure to complex architectural typologies. Analysis of facility program toward management of complex patterns. Prerequisites: ARC 351, 381. Restricted to major. Studio fee: \$60.

ARC353 - Vertical Studio 353-4 to 6 Architectural Vertical Studio. A series of studio exercises designed to allow students to earn credit for ARC 251, 252, 351, 352, 451, 452, or ID 251 or 252. Projects are designed to fulfill the goals of the course for which this is substituted. Prerequisites and course work load vary according to the course for which this is substituted. Sophomore standing or higher required. Course may be repeated for up to 14 credit hours. Restricted to major in Architectural Studies or Interior Design. Studio fee: \$12 per credit hour.

ARC361 - Structures I: Statics & Steel 361-3 Structures I: Statics and Steel. Elementary study of forces and force systems using graphic and analytic methods. Basic structural concepts: reactions, shear and moment diagrams, axial, eccentric and combined loading on beams and columns. Design of floor and roof structural systems: load analysis, acting and resisting stresses. Truss stress analysis. Introduction to steel design. Prerequisites: PHYS 203A, PHYS 253A. Restricted to major.

ARC362 - Structures II: Wood & Concrete 362-3 Structures II: Wood and Concrete. Study of wood and concrete structural framing systems: investigation of wood and concrete materials and their limitations, and the use of appropriate structural design procedures for wood and concrete structures through selection of appropriate, common and economical shapes to satisfy building structural requirements and applicable building code requirements. Prerequisite: ARC 361. Restricted to major.

ARC381 - Envir Design I: Site Planning 381-2 Environmental Design I: Site Planning. The fundamentals of site planning with reference to the historical, environmental, climatic, technologic, and legal aspects in site design. Introduction to use of surveying equipment and the preparation of a site design with emphasis on the principles of sustainable design. Restricted to major. Studio fee: \$24.

ARC399 - Individual Study 399-1 to 16 Individual Study. Provides students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of the entire institution. Each student will work under the supervision of a sponsoring staff member. Special approval needed from the faculty sponsor and school director.

ARC410 - Construction Safety Mgmt 410-3 Construction Management and Operations: Construction Safety Management. Introduce principles of safety and health in the construction industry and their

relationship to Construction Management and Operations (COMO). Include identification of safety and health hazards, risk reduction measures, personal protection, and safety attitudes and training. Explore Occupational Safety and Health Regulations for Construction.

ARC411 - Time, Value & Risk Mgmt 411-3 Construction Management and Operations: Time, Value and Risk Management. Overview of management issues and scheduling for a project. Explain importance of time and risk management in construction and construction business. Study how fundamentals of scheduling, liability, and value are interrelated and explore impacts on project, scope, and budget. Apply constructability, sustainability, return on investment strategies, quality management terms and definitions throughout project phases. Prerequisite: ARC 210 and ARC 310.

ARC412 - Construction Project Mgmt 412-4 Construction Management and Operations: Construction Project Management. This is a two-part course beginning with an overview of the project management process followed by a more in-depth examination of the activities needed to successfully initiate, plan, schedule, and control the time, schedule, scope, and cost factors of a project. The second part of the course conducts a more focused and in-depth application to the CM process and services. Prerequisites: ARC 210 and ARC 310.

ARC413 - Budget & Cost Mgmt 413-3 Construction Management and Operations: Budget and Cost Management. Provide overview of various estimating tools and methods for managing budgets, project estimates, and costs during program, construction and facilities management phases. Identify roles and responsibilities for controlling and monitoring project cost. Identify and develop methods for creating valid project estimates and budgets. Explore Integrated Project Delivery (IPD) for budget and cost management. Prerequisites: ARC 210 and ARC 310.

ARC434 - Preservation Field Studies 434-3 Preservation Summer. (Same as HIST 496B) Field experience in research and historic preservation issues related to regionally and nationally significant historic sites in southernmost Illinois between the Ohio and Mississippi rivers. Not for graduate credit. Special approval needed from the instructor.

ARC444 - Architectural Field Studies 444-1 to 6 Architectural Field Studies. In site study of specified world area(s) concerning the influence of the region's particular culture on architecture, landscape, urban and interior design. The course reviews both historic and current; ethnicity, social, philosophical, religious, economic and political values of the region being visited to gain insights on the symbiotic relationship between culture and design. Not for graduate credit. Fees: cost of transportation, lodging, access fees and general cost related to delivery of the curriculum items that are in addition to on-site courses. Special approval needed from the instructor and school director.

ARC451 - Urban Design & Community 451-6 Urban Design and Community. (Same as ARC 555) Study of urban design and community as cultural and spatial development of human settlement patterns. All previous design course experience will be brought to bear on the architectural projects within the context of urban and community criteria. Not for graduate credit. Prerequisite: ARC 352. Restricted to major. Studio fee: \$72.

ARC452 - Design VI: Integration 452-6 Design VI: Integration. (Same as ARC 556) This comprehensive design studio focuses the knowledge and skills developed in all previous courses on a single project. The course emphasizes the design integration of the building's structural and environmental systems. Not for graduate credit. Co-requisite: ARC 482. Prerequisites: ARC 342, 362, 451, 481. Restricted to major. Studio fee: \$72.

ARC462 - Analysis & Lateral Forces 462-3 Structures III: Analysis and Lateral Forces. (Same as ARC 562) Continuing study of framing materials and systems for buildings using advanced concepts of structural analysis. Included are earthquake resistant structures, wind resistant design, composite beams, plastic theory, statically indeterminate structures, long spans, moment distribution, multi-story structures, and other related topics. Not for graduate credit. Prerequisite: ARC 362. Restricted to major.

ARC470 - Architectural Visualization 470-3 Architectural Visualization. This course is designed to give the student a fundamental understanding of the practices of 3D architectural modeling and visualization. Themes emphasized are: 3D modeling; still frame rendering; animation production; image editing and post production. Priority enrollment is given to graduate students in ARC 570 before ARC 470 is offered.

Prerequisite: ARC 271. Restricted to architecture and interior design majors. Special approval needed from the advisor.

ARC481 - Environmental Design II 481-3 Environmental Design II: Energy and Systems. (Same as ARC 583, ID 481) The study of the influence of energy, human comfort, climate, context, heating, cooling and water on the design of buildings and sites. The design of passive and active environmental systems and strategies for sustainability. Not for graduate credit. Restricted to major.

ARC482 - Environmental Design III 482-3 Environmental Design III: Lighting and Acoustics. (Same as ARC 584, ID 482) This course provides a comprehensive overview of the luminous and sonic environment with emphasis on energy-conscious design. Not for graduate credit.

ARC499 - Individual Study 499-1 to 16 Individual Study. Provides students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of the entire institution. Each student will work under the supervision of a sponsoring staff member. Not for graduate credit. Special approval needed from the faculty sponsor and school director.

ARC500 - Arch Res Methods & Programming 500-3 Research Methods and Programming. The foundational study of research methods and programming that serve architectural studies. This course investigates the co-application of multiple methodologies for the development of research topics and architectural programs. The conclusion of the course is the definition of an individual thesis project to be completed in the Graduate Program. Restricted to enrollment in M. Arch. program.

ARC502 - Architecture Seminar 502-3 Architecture Seminar. Study of current trends and topics in architecture. Assigned readings and investigations are completed on approved topics chosen by the student. Students have the option of completing in situ study during the course.

ARC510 - Construction Safety Mgmt 510-3 Construction Management and Operations: Construction Safety Management. Introduce principles of safety and health in the construction industry and their relationship to Construction Management and Operations (COMO). Include identification of safety and health hazards, risk reduction measures, personal protection, and safety attitudes and training. Explore Occupational Safety and Health Regulations for Construction.

ARC511 - Time, Value & Risk Mgmt 511-3 Construction Management and Operations: Time, Value and Risk Management. Overview of management issues and scheduling for a project. Explain importance of time and risk management in construction and construction business. Study how fundamentals of scheduling, liability, and value are interrelated and explore impacts on project, scope, and budget. Apply constructability, sustainability, return on investment strategies, quality management terms and definitions throughout project phases.

ARC512 - Construction Project Mgmt 512-4 Construction Management and Operations: Construction Project Management. This is a two-part course beginning with an overview of the project management process followed by a more in-depth examination of the activities needed to successfully initiate, plan, schedule, and control the time, schedule, scope, and cost factors of a project. The second part of the course conducts a more focused and in-depth application to the CM process and services.

ARC513 - Budget & Cost Management 513-3 Construction Management and Operations: Budget and Cost Management. Provide overview of various estimating tools and methods for managing budgets, project estimates, and costs during program, construction and facilities management phases. Identify roles and responsibilities for controlling and monitoring project cost. Identify and develop methods for creating valid project estimates and budgets. Explore Integrated Project Delivery (IPD) for budget and cost management.

ARC531 - Seminar: Arch History 531-3 Seminar: Architectural History. A seminar devoted to the teaching, investigation and discussion of the history of architecture. Students have the opportunity to investigate historical precedents and the context within which these ideas have developed. The connection to the contemporary architectural setting and current concepts will be developed and discussed.

ARC532 - Global Traditions 532-3 Global Traditions in Architecture. Seminar to discuss architecture beyond the tradition of Western civilization. Focus is upon the architecture of Asia, the Middle East and North America. Primitive, pre-industrial vernacular as well as cultural specific high style architecture is included. The course format is: lectures, assigned reading, class discussion and individual research reports.

ARC541 - Arch Systems & Environment 541-3 Architectural Systems and the Environment. Provides an overview of building technology and systems and the role of building systems performance in providing architectural and human environments and their subsequent impact upon the natural environment. The course builds upon the philosophical ideas of sustainable design and resource consumption tools. Concurrent enrollment in ARC 551 is required. Restricted to enrollment in M. Arch program.

ARC550 - Regional Arch Studio 550-6 Regional Architecture Studio. Architectural design studio focused upon regional architecture and planning. The studio addresses regional architectural issues building upon the local culture and design traditions. Restricted to enrollment in the M. Arch. program. Studio fee: \$72.

ARC551 - Comp Arch Design Studio 551-6 Comprehensive Architecture Design Studio. Arch. design studio focused upon comprehensive design of a large-scale urban building as fulfillment of the total integration of architectural systems and design criteria. This course serves as the culmination of the fulfillment of student performance criteria through the integration of all major building and urban systems while addressing the current human, social, and environmental issues. Prerequisite: ARC 550. Co-requisite: ARC 541. Restricted to enrollment in M. Arch program. Studio fee: \$72.

ARC552 - Grad Arch Des Thesis I 552-6 Graduate Architectural Design Thesis I. Initial development of individual design thesis project in a studio setting. The studio will consist of design project or an individual student thesis project as developed in ARC 500-3. Approval of thesis project by graduate faculty is required. Prerequisite: ARC 500 and 551. Restricted to enrollment in M. Arch. program. Studio fee: \$72.

ARC554 - Grad Arch Des/Thesis II 554-6 Graduate Architectural Design/Thesis II. A continuation of ARC 552 in the conclusion, presentation and final approval of the individual design/thesis project in a studio setting. This course is taken by students who wish to graduate through the department. Prerequisite: ARC 552. Studio fee: \$72.

ARC555 - Urban Design & Community 555-6 Urban Design & Community. (Same as ARC 451) Study of urban design and community as cultural and spatial development of human settlement patterns. All previous design course experience will be brought to bear on the architectural projects within the context of urban and community criteria. Restricted to major. Studio fee: \$72.

ARC556 - Design VI: Integration 556-6 Design VI: Integration. (Same as ARC 452) This comprehensive design studio focuses the knowledge and skills developed in all previous courses on a single project. The course emphasizes the design integration of the building's structural and environmental systems. Restricted to major in architectural studies. Studio fee: \$72.

ARC562 - Analysis & Lateral Forces 562-3 Analysis & Lateral Forces. (Same as ARC 462) Continuing study of framing materials and systems for buildings using advanced concepts of structural analysis. Included are earthquake resistant structures, wind resistant design, composite beams, plastic theory, statically indeterminate structures, long spans, moment distribution, multi-story structures, and other related topics. Restricted to major.

ARC570 - Architectural Visualization 570-3 Architectural Visualization. This course is designed to give the student a fundamental understanding of the practices of 3D architectural modeling and visualization. Themes emphasized are: 3D modeling; still frame rendering; animation production; image editing and post production. Restricted to enrollment in M. Arch. program.

ARC581 - Special Projects 581-1 to 12 Special Projects. Investigation of individual problems in architecture under the supervision of a faculty member. Restricted to M. Arch. majors. Special approval needed from the instructor.

ARC582 - Special Readings 582-1 to 6 Special Readings in Architecture. Assigned readings in an area of architecture under the supervision of a faculty member. Restricted to M. Arch. majors. Special approval needed from the instructor.

ARC583 - Environmental Design II 583-3 Environmental Design II: Energy & Systems. (Same as ARC 481, ID 481) The study of the influence of energy, human comfort, climate, context, heating, cooling and water on the design of buildings and sites. The design of passive and active environmental systems and strategies for sustainability. Restricted to major.

ARC584 - Env Des III: Light & Acoustics 584-3 Environmental Design III: Lighting & Acoustics. (Same as ARC 482, ID 482) This course provides a comprehensive overview of the luminous and sonic environments with emphasis on energy conscious design. Restricted to major.

ARC591 - Professional Practice I 591-3 Architectural Professional Practice I. Introduction to the organization, management, and practice of architecture as a business and profession. Emphasis is placed on the range of services provided, professional ethics, business management, marketing, contracts and negotiations, design cost analysis/controls, and other aspects of professional practice. Restricted to enrollment in M. Arch. program.

ARC592 - Arch Professional Practice II 592-3 Architectural Professional Practice II. The development of the study and discussion of architectural professional practice issues including leadership, legal responsibilities, ethics and professional judgment. Restricted to enrollment in M. Arch. program.

ARC593 - Arch Research Paper 593-6 Architectural Research Paper. This course is for students who wish to perform individual research in architecture on an approved topic. Prerequisite: ARC 552. Restricted to enrollment in M. Arch. program.

ARC594 - Programming & Analysis 594-3 Programming & Analysis. The purpose of this course is to discuss the programming and analysis of a new architectural project. Included in the review of these topics will be related discussions with regard to project type, client needs, site and context. As part of the learning process, students will be expected to participate in class discussion as well as complete projects which are designed to develop critical thinking, speaking, and writing skills. Prerequisite: ARC 592 with a grade of B- or better.

ARC595 - Project Planning 595-3 Project Planning + Design. The course discusses the preliminary design of a building & the site of a new architectural project. Included in the review of these topics will be related discussions with regard to project type, client needs, site and context. As part of the learning process, students will be expected to participate in class discussion as well as complete projects which are designed to develop critical thinking, speaking, writing skills, and architectural design skills. Prerequisite: ARC 594 with a minimum grade of B-.

ARC596 - Project Development 596-3 Project Development + Documentation. The purpose of this course is to review the integration & detailing of a new architectural project. Included in the review of these topics will be related discussions with regard to building systems, assemblies, code, and cost. As part of the learning process, students will be expected to participate in class discussion as well as complete projects which are designed to develop critical thinking, speaking, writing, and architectural design skills. Prerequisite: ARC 595 with a minimum grade of B-.

ARC597 - Construction + Evaluation 597-3 Construction + Evaluation. The purpose of this course is to review the construction and evaluation of a new architectural project. Included in the review of these topics will be related discussions with regard to construction and post-occupancy evaluation. As part of the learning process, students will be expected to participate in class discussion as well as complete projects which are designed to develop critical thinking, speaking, and writing skills. Prerequisite: ARC 596 with a minimum grade of B-.

ARC599 - Thesis 599-6 Thesis. Graded S/U or DEF only. Prerequisite: ARC 552. Restricted to enrollment in M. Arch. program.

ARC601 - Continuing Enrollment 601-1 Continuing Enrollment. For graduate students who have not finished their degree program and who are in the process of working on their thesis, research paper, or capstone project course (ARC 554). Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Architectural Studies Faculty

Anz, Craig K., Associate Professor, Ph.D., Texas A&M, 2009, M.Arch., University of Texas at Arlington, 1991.

Brazley, Michael D., Associate Professor, Ph.D., University of Louisville, 2002, B.Arch., Howard University, 1978.

Davey, Jon, Professor, Ph.D., Southern Illinois University Carbondale, 2011.

Dobbins, John K., Interim Director and Associate Professor and Head of Master of Architecture Program, M.Arch., M.B.A., University of Illinois, 1986.

Gonzalez-Torres, Rolando E., Associate Professor, Ph.D., Universitat Politecnica de Catalunya, Spain, 2008, M.Ed., Western Kentucky University at Bowling Green, 2001, MLA, Texas A&M, 1996.

Hays, Denny M., Associate Professor, Emeritus, M.Arch., University of Utah, 1971.

Huang, Qian., Assistant Professor, Ph.D, Purdue University, 2013.

Lach, Norman, Assistant Professor, M.Arch., University of Illinois Champaign, 1974.

LaGarce, Melinda, Associate Professor, Emerita, M.F.A., Texas Technology University, 1972.

McDonald, Shannon, Associate Professor, M.Arch., Yale University, 1992.

Morthland, Laura, Associate Professor, M.I.Arc., M.F.A., University of Oregon, 2003.

Owens, Terry A., Associate Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1984.

Poggas, Christy, Assistant Professor, Emerita, M.S. Ed., Southern Illinois University Carbondale, 1990. B.Arch., University of Arizona, 1975.

Smith, Peter B., Associate Professor, M.Arch., University of Illinois, 1980.

Swenson, Robert, Associate Professor, Emeritus, M.Arch., Yale University, 1969.

Tully, Timothy R., Assistant Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1990.

Wendler, Walter V., Chancellor Emeritus, Director and Professor, Emeritus, Ph.D., University of Texas, 1991, M.Arch., University of California, Berkeley, 1975.

Wessel, Stewart P., Professor, M.F.A., University of North Texas, 1992.

White, David J., Associate Professor, Emeritus, M.S.Ed., Southern Illinois University Carbondale, 1991.

Wright, James K., Assistant Professor, Emeritus, M.Arch., University of Pennsylvania, 1966.

Army Military Science

Army Military Science is a voluntary course sequence, which may lead to a commission as an officer in the United States Army (Active Army, Army Reserves, or Army National Guard). The basic course, consisting of four 100- and 200-level courses plus one 400-level course, is open to all students and carries no military obligation. Students may take one or all of the basic courses offered, receiving credit hours for each course without incurring a commitment to further study in Army Military Science or any branch of the armed forces. If a student continues to the advanced course, the student will then incur a military obligation. The obligation may be served in the Active Army, Army Reserves, or Army National Guard after the student is commissioned as an officer upon completion of the Army Military Science program. Students who wish to complete the program and receive a commission must earn a bachelor's degree. The field of study is unrestricted. Courses in communication skills, computer literacy, and are required.

The Army Military Science program offers a progressive adventure-filled two-year and four-year program, designed to teach students the leadership and management skills needed to pursue an exciting career in the United States Army. The student who successfully completes the program will receive a commission in the Active Duty Forces, the Army Reserves, or the Army National Guard. Students may request and be guaranteed reserve forces duty, which allows the student to pursue parallel dual careers in the reserve components of the Army and civilian economy. The four-year program is divided into the basic course, covering freshman and sophomore years, and the advanced course covering the junior and senior years.

The basic course prepares students for the advanced course and provides them with an education in national defense, basic leadership, and management skills. The advanced course is designed to provide training and instruction encompassing a wide range of subjects from organizational and managerial leadership, ethics and professionalism, and military justice, to the United States. The understandings

and experiences derived from these courses and adventure-training exercises are required to enable a student to grow into an effective junior officer in the U.S. Army.

Veterans of any service, students who are currently members of the armed forces (Reserve or National Guard), and students who have successfully completed three or four years of Junior Reserve Officer Training Corps instruction, may be eligible to enroll in the advanced course when they have obtained junior academic status at the University. Students who have no prior military service may attend a 28-day Leadership Training camp at Fort Knox, Kentucky, which will qualify them for entrance into the advanced course of Army Military Science. This camp incurs no obligation on the part of the student.

All students enrolled in the Cadet Leaders Course will attend a 32-day advanced training camp at Fort Lewis, Washington between the first and second years of the advanced course (normally the summer between the student's junior and senior school year). Both the Leadership Training and Advanced Camp pay the student for travel and attendance at camp, plus provide free room, board, and uniforms.

The student additionally learns about the wide range of Army career specialties available and has the opportunity to request duty in those fields where qualified. Those students currently in the Guard or Army Reserves may continue to participate in their Guard/Reserve unit and pursue a commission through the Army's Simultaneous Membership Program (SMP). Participation in the (SMP) allows soldiers currently serving in the National Guard or Army Reserve to receive Sergeants (E5) pay while performing unit drills.

Freshman and sophomore students enrolled in the four-year program are eligible to compete for Army Military Science scholarships for up to three- and one-half-years. These scholarships pay full tuition, fees, books and up to \$500 per month subsistence allowance. Illinois residents who are enrolled in ROTC can compete for state Army ROTC tuition waivers, which pay tuition and other selected fees.

In addition to courses offered for academic credit, the Department of Army Military Science sponsors extracurricular activities. The Ranger Challenge Team, Color Guard Teams, and Pershing Rifles are open to all ROTC students. Adventure training takes place in the form of rappelling clinics, field training exercises, survival training, and Civil War Battlefield terrain walks. The department also conducts several traditional social functions throughout the year.

Further information may be obtained from the Department of Army Military Science, telephone 618/453-7563 or 453-5786.

Leadership (Military Science) Minor

The Department of Military Science offers a Minor in Leadership with the focus of Military Science. It is available to all students willing to complete at least 25 credit hours of Army Military Science courses and additional elective courses from the Professor of Military Science approved elective list. This minor emphasizes leadership and critical thinking skills. The course is designed to give students the leadership tools necessary to succeed in the military or any other civilian profession. Students not enrolled in Army ROTC can complete this minor without incurring any type of military obligation. Students which are not enrolled in the Army ROTC program will take basic Army Military Science (AMS) courses along with additional public speaking, advanced composition and leadership courses. Students enrolled in the Army ROTC program will take basic AMS courses along with advanced AMS courses and summer leadership training. Students must discuss their minor program with the Director, Army Military Science, to design a coherent program to meet their individual needs.

Army Military Science Courses

AMS101 - Intro to the Army 101-1 to 2 Introduction to the Army and Critical Thinking. Course introduces students to the personal challenges and competencies that are critical for effective leadership. Students will learn how the personal development of life skills such as critical thinking, time management, goal-setting, stress management, and comprehensive fitness relate to leadership and the Army profession.
*Course includes optional weekly leadership laboratory.

AMS102 - Adaptive Leadership 102-1 to 2 Adaptive Leadership and Professional Competence. Introduction to the personal challenges and competencies that are critical for adaptive leadership. Students will learn the basics of the communications process and the importance of leaders' development

of the essential skills to effectively communicate in the Army. Students will examine the Army and what it means to be a professional in the U.S. Army. *Course includes optional weekly leadership laboratory.

AMS201 - Leadership 201-3 Leadership and Decision-Making. Course explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories that form the basis of the Army leadership framework. Aspects of personal motivation and team-building are practiced via planning, executing and assessing team exercises. Course includes mandatory weekly leadership laboratory.

AMS202 - Army Doctrine 202-3 Army Doctrine and Team Development. Course examines the challenges of leading teams in a complex operational environment. Course highlights dimensions of terrain analysis, patrolling and operation orders. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the context of military operations. Students develop greater self-awareness as they assess their own leadership styles and practice communication and team-building skills. Course includes a weekly leadership laboratory.

AMS203 - Cadet Basic Course 203-6 Cadet Basic Course. Course incorporates a wide range of training events designed to develop/assess leadership and officer potential and qualify students for contracting. Course is rigorous and demanding (mentally and physically) and will test intelligence, ingenuity and stamina. The structure of the training program is based on action-oriented training; with emphasis on hands-on, outdoor training with rapid and constructive feedback to students. The training program is designed to inspire students to become outstanding leaders with a sound understanding of traditional leadership values. Camp is held off-campus at Fort Knox, KY.

AMS301 - Training Management 301-4 Training Management and the War-Fighting Functions. Course is driven by the Professional Competence ALA; which includes introduction to squad/platoon tactical operations using troop-leading procedures and battle drills to achieve the assigned mission within the commander's intent. Through the introduction of the leadership lab practicum, students learn to plan, resource and execute training of subordinates within the leadership labs. This experience gives students the opportunity to work on teamwork and leadership skills in a hands-on, performance-oriented environment. Course includes weekly leadership laboratory.

AMS302 - Applied Leadership 302-4 Applied Leadership in Small Unit Operations. Course balances adaptability and professional competence-building on the tactical lessons introduced in AMS 301. Various platoon operations are stressed in order to familiarize students with material they can expect to execute during CST. Adaptability concepts introduced include analysis of complex problems, creating solutions that exhibit agile and adaptive thinking, analysis of the situational environment and formulation of solutions to tactical and organizational problems. Course includes weekly leadership laboratory.

AMS358 - Cadet Advanced Course 358-6 Cadet Advanced Course. This course trains students to Army standards, develop leadership, and evaluate officer potential. Course meets the pre-commissioning summer training requirement as set for in accordance with AR 145-1 and CCR 145-03. Cadet Advanced Course is the most significant training and evaluation event in ROTC. Training is complex, challenging, and rigorous, and conducted in a stressful environment. Camp is held at Fort Knox, KY.

AMS401 - The Army Officer 401-4 The Army Officer. An advanced course that places primary emphasis on officership with MSIV Cadets who are the department's educational main effort: AMS 401 and 402 (combined) refine and complete the cadet-to-commissioned-officer transition. Mission command and ethics are stressed to assist Cadets in further embracing their future role as Army officers. Course includes weekly leadership laboratory. Restricted to cadets.

AMS402 - Company Grade Leadership 402-4 Company Grade Leadership. Course is the culmination of a four-year sequential, progressive, challenging developmental leadership experience. It is during this final semester that Cadets undergo final preparation of the duties and responsibilities of a commissioned officer and integration into the Army. Emphasis is on critical knowledge, skills, abilities and competencies newly-commissioned officers will need to succeed in their first unit of assignment, and the modern operating environment where they will be expected to plan, prepare, execute and assess platoon-level training strategies and to enable mission accomplishment. Course includes weekly leadership laboratory. Restricted to cadets.

AMS403 - Independent Study 403-1 to 3 Independent Study in Military Science. Directed independent study in selected areas. Students may register for one hour per semester or may register for one hour for the first semester and two hours for the second. They may not register for three hours during one semester. Not for graduate credit. Special approval needed from the director of Army Military Science.

AMS404 - U.S. Military History 404-3 U.S. Military History. This course provides a historical perspective to decisions made by American military leaders; emphasizing solutions to challenges future Army officers might face: battlefield complexity, resource limitations, teamwork deficiencies, etc. The student will learn how former military leaders confronted and coped with similar issues, using their experiences and approaches to arm students with the ability to create their own solutions. Commissioning requirement for Army ROTC cadets. Course not restricted to ROTC cadets.

Army Military Science Faculty

Downey, Thomas, Assistant Professor, M.S., Southern Illinois University Carbondale, 2004.

Medlin, Scott, Major, Assistant Professor, B.S., Eastern Illinois University Carbondale, 2000.

Art and Design

The School of Art and Design offers two undergraduate degrees, the Bachelor of Fine Arts and the Bachelor of Arts. The B.F.A., a professional degree, includes ten specializations: art education, ceramics, communication design, drawing, glass, industrial design, metalsmithing, painting, printmaking, and sculpture. Under the B.A. degree there are two majors: art and design. The B.A. degree in art includes three specializations: art education, art history, and general studio.

With a B.F.A. degree in ceramics, drawing, glass, metalsmithing, painting, printmaking, or sculpture, students are prepared to practice as studio artists, go on to advanced study, or enter careers related to their studio specializations. The B.F.A. specializations in industrial design and communication design prepare students with the intellectual, technological, and practical knowledge required in the professional world of design. With a specialization in industrial design, students are prepared to practice in the industrial field of contemporary product development.

Communication Design is the specialization that creates, informs, and modifies the world around us. Its curriculum provides students with a thorough understanding of and competence in communication in a digital-based society. It includes broad-based technical instruction along with instruction in typography, digital graphic technology, design concepts, information design, and industry standards required by the communication field.

Communication design students learn to combine and develop concepts and employ visualization techniques that instruct, interpret, and/or persuade. This curriculum focuses on message content and theory in print, web, and interactive/multimedia design.

Job titles in the fields of design include Multimedia Design, Web Designer, Web Communication Designer, Graphic Communication, Digital Imaging, Multimedia, Interactive Graphic Design, Internet Communication, Motion Graphics, Art Director, or Creative Director.

The specialization of art education is offered within a liberal arts (B.A.) as well as a professional (B.F.A.) curriculum format. Upon completion of either program, students in art education are prepared and licensed to teach in the public schools. However, the Bachelor of Fine Arts degree program offers the student more studio electives in art and design. With the B.F.A. degree in art education, students are better prepared to teach studio arts in American schools or go on for advanced study either in art or art education.

Art History is a study of visual culture in its historical contexts. The B.A. specialization in art history provides rigorous liberal arts training in analytical and critical viewing, reading, thinking, speaking, and writing. It prepares students for graduate study, professional school, and careers in museums, auction houses, publishing, and other fields. Majors take courses in art history, studio art, and the University's Core Curriculum and enjoy a wide choice of electives.

The general studio specialization is the most flexible program. By means of both requirements and elective options, students may plan interdisciplinary programs in art or develop programs leading toward a specific career objective.

The education of teachers, scholars, artists, and designers requires both a comprehensive program in the specializations and a university core program outside of the major. In meeting these objectives the School emphasizes both theory and practice in its specializations. Studies are sequentially planned to facilitate orderly matriculation through the baccalaureate curricula.

Prior to entry into selected specializations, all majors are required to complete foundation studies: beginning coursework in art history, drawing, and two- and three-dimensional design. In addition, for entrance into the art B.F.A. specializations, students must have successfully completed a portfolio review of work from previous art studies (at SIU or elsewhere). The review will be conducted upon completion of the foundation studio courses and one or two courses specific to the specialization.

Students admitted to a design specialization must own a laptop computer and software as specified by Design faculty for subsequent courses. The hardware and software will be utilized throughout the Design course sequence beginning with the 300-level specialization courses. Financial aid may be available to eligible students. Students must consult the SIU Carbondale School of Art and Design website for current details on hardware and software requirements. Information is also available through faculty and the School's advisement office.

Transfer students seeking admission from another program at Southern Illinois University must meet the same requirements as those seeking admission from another institution. Evaluation of a studio course for transfer credit from another institution will be made on the basis of a presentation of the work (or professional quality images of the work) executed in the course to determine whether the course will be considered equivalent to a specific course or accepted as studio elective credit.

Most prerequisite courses must be completed with a grade of C or better before a student may advance into the next course. Students should refer to individual course descriptions for specific information. All specialization-specific courses in the BFA programs must be completed with a C or better.

Courses in art and design have limited enrollment, and enrollment may be cancelled for students who do not attend the initial class session of the semester. Courses in some programs must be taken in a certain sequence, and not all classes are offered every semester. Admission to certain courses is restricted, and permission must be obtained prior to registration. For some courses permission to register is based upon submission of a portfolio.

Instructional Support Equipment Fee

The School of Art and Design assesses all undergraduate art and design majors an instructional support equipment fee of \$10 per credit hour; a maximum of 12 credit hours will be charged each for fall and spring semesters and six for summer.

Art Major

Bachelor of Fine Arts Degree, College of Liberal Arts

A student majoring in art should select one of the following fields of interest by the end of the freshman year: art education, ceramics, communication design, drawing, glass, industrial design, metalsmithing, painting, printmaking, or sculpture.

Art Major - Art Education Specialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39

Degree Requirements	Credit Hours
The following must be taken in order to satisfy state teacher licensure requirements: EDUC 211 and EDUC 214.	
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Art Education	(9)+57
Foundation requirements: AD 100A, AD 100B, AD 110, AD 120; two from AD 101 and/or AD 207A, AD 207B, AD 207C	(9)+9
Studio requirements: AD 201, AD 202, AD 203, AD 204, AD 219	15
Art education requirements: AD 208, AD 308, AD 318, AD 328, AD 338	16
Art and Design history elective: AD300- or AD400- level	3
Art Education or Studio Electives	14
Professional Education Requirements: EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, EDUC 401A.	24
Total	120

Art Major - Ceramics Specialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Ceramics	(9)+81
Foundation requirements: AD 100A; AD 100B; AD 110; AD 120; two from AD 101, AD 207A, AD 207B, and/or AD 207C.	(9)+9
Major requirements: AD 203; AD 204; AD 205; AD 214; AD 219; AD 303; AD 304A; AD 304B; AD 305A; AD 314A; AD 389; AD 404A; AD 404B; AD 404C; and AD 404D	51

Degree Requirements	Credit Hours
Art and Design history electives (AD300- or AD400- level)	6
Studio art electives	15
Total	120

Art Major - Communication Design Specialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Communication Design	(9)+81
Foundation requirements: AD 100A, AD 100B, AD 110, AD 120, two from AD 207A, AD 207B, AD 207C	(9)+9
Major requirements: AD 101; AD 122; AD 219; AD 222; AD 249; one from AD 302A, AD 302B, AD 302C or AD 302D; AD 322; AD 332; AD 337; AD 352; 16 credits from AD 372, AD 452, AD 472, and AD 489D (courses numbered 322 and above require ownership of MacIntosh laptop computer)	46
Art and Design Electives (5 hours at 300-400 level)	12
Electives	14
Total	120

Art Major - Drawing Specialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Drawing	(9)+81

Degree Requirements	Credit Hours
Foundation requirements: AD 100A, AD 100B, AD 110, AD 120, two from AD 207A, AD 207B, AD 207C	(9)+9
Major Requirements: AD 200; AD 201; AD 202; AD 203; AD 204, AD 205 or AD 214; AD 219; AD 300-9; AD 301A; AD 301B; one from AD 302A, AD 302B, AD 302C, or AD 302D; AD 389; AD 400A; AD 400B; AD 400C	54
Art and Design History Electives (AD300- or AD400- level)	6
Studio Art Electives	12
Total	120

Art Major - Glass Specialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Glass	(9)+81
Foundation requirements: AD 100A; AD 100B; AD 110; AD 120; two from AD 101; AD 207A; AD 207B; and/or AD 207C	(9)+9
Major requirements: AD 200; AD 201 or AD 202; AD 203; AD 204; AD 205; AD 214; AD 219; AD 303; AD 304A; AD 305A; AD 314A; AD 314B; AD 389; AD 414A; AD 414B; AD 414C; AD 414D	54
AD History Electives (AD300- or AD400- level)	6
Studio Art Electives	12
Total	120

Art Major - Industrial Design Specialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39

Degree Requirements	Credit Hours
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Industrial Design	(9)+81
Foundation requirements: AD 100A; AD 100B; AD 110; AD 120; two from AD 101; AD 207A; AD 207B; and/or AD 207C	(9)+9
Major requirements: AD 101, AD 200; 12 hours from AD 203; AD 204; AD 205; AD 300; AD 303; AD 304A or AD 305A; AD 213; AD 219; AD 223; AD 313; AD 323; AD 332; AD 337; AD 363; AD 383; AD 423; AD 489A	55
AD or cognate electives	17
Total	120

Art Major - Metalsmithing Specialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Art and Design AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Metalsmithing	(9)+81
Foundation requirements: AD 100A; AD 100B; AD 110; AD 120; two from AD 101, AD 207A; AD 207B; and/or AD 207C	(9)+9
Major requirements: AD 203; AD 204; AD 205; AD 214; AD 219; AD 303; AD 304A; AD 305A; AD 305B; AD 314A; AD 389; AD 405A; AD 405B; AD 405C; AD 405D	51
AD history electives (AD300- or AD400- level)	6
Studio Art Electives	15
Total	120

Art Major - Painting Specialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Painting	(9)+81
Foundation requirements: AD 100A; AD 100B; AD 110; AD 120; two from AD 207A; AD 207B; AD 207C	(9)+9
Major requirements: AD 200; AD 201; AD 202; AD 203; AD 204; AD 205 or AD 214; AD 219; AD 300-6; AD 301A; AD 301B; AD 301C; one from AD 302A; AD 302B; AD 302C; or AD 302D; AD 389; AD 401A; AD 401B; AD 401C	54
AD History Electives (AD300- or AD400- level)	6
Studio Art Electives	12
Total	120

Art Major - Printmaking Specialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Printmaking	(9)+81
Foundation requirements: AD 100A; AD 100B; AD 110; AD 120; two from AD 207A; AD 207B; and/or AD 207C	(9)+9
Major requirements: AD 200; AD 201; AD 202; AD 203; AD 204; AD 205 or AD 214; AD 219; AD 300-6; AD 301A; nine hours from AD 302A; AD 302B; AD 302C; or AD 302D; AD 389; AD 402A; AD 402B; AD 402C	54
AD history electives (AD300- or AD400- level)	6
Studio Art Electives	12

Degree Requirements	Credit Hours
Total	120

Art Major - Sculpture Sepcialization (BFA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
Requirements for Specialization in Printmaking	(9) + 81
Foundation requirements: AD 100A; AD 100B; AD 110; AD 120: two from AD 101; AD 207A; AD 207B and/or AD 207C	(9) + 9
Major requirements: AD 200, AD 201, or AD 202; AD 203; AD 204; AD 214; AD 219; AD 303-9; AD 304A; AD 305A; AD 214A; AD 389; AD 403A; AD 403B; AD 403C	51
AD history electives (AD300- or AD400- level)	6
Studio art electives	15
Total	120

Bachelor of Arts Degree, College of Liberal Arts

A student majoring in art with a specialization in art history, art education, or general studio should select the specialization by the end of the freshman year.

Art Major - Art History Specialization (BA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Two from AD 207A, AD 207B, or AD 207C should be taken as the University Core Curriculum humanities courses. AD 100A or AD 100B should be taken as the fine arts course.	
Requirements for Specialization in Art History	(9)+81

Degree Requirements	Credit Hours
Foundation requirements: AD 100A or AD 100B; AD 207A; AD 207B; AD 207C	(9)+3
Studio Courses	(3)+6
Major requirements: two from AD 497A, AD 497B, AD 497C, and AD 497D (topical seminars, may be repeated when topic varies); one from AD 310A, AD 310B, AD 310C, AD 311, AD 312, AD 316, AD 330, AD 497A, AD 497B, or other approved pre- or early-modern course; one from AD 317I, AD 320, AD 358, AD 368, or other approved non-Western course	12
Art History electives	18
Foreign language (French or German recommended)	6
Humanities electives (classics, east Asian, English, French, German, history, linguistics, or philosophy)	9
Approved electives (studio arts, design, museum studies, humanities, social sciences, foreign language, architecture, and other approved areas) ¹	27
Total	120

¹ At least 27 hours of art history electives and approved electives must be: AD 300- or 400-level.

Art Major - General Studio Specialization (BA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
AD 100A or AD 100B should be taken as the University Core Curriculum fine arts course. Two from AD 207A, AD 207B, or AD 207C should be taken as the humanities courses.	
College of Liberal Arts Requirement	6
Foreign Language	6
Requirements for Specialization in General Studio	(9)+75
Foundation requirements: AD 100A; AD 100B; AD 110; AD 120; AD 207A; AD 207B; AD 207C	(9)+12

Degree Requirements	Credit Hours
Major requirements: Five courses from AD 200, AD 201; AD 202; AD 203; AD 204; AD 205; AD 213; AD 214; or AD 249	15
AD 219	3
AD 300- and 400-level studio courses in at least three disciplines	27
AD 400C; AD 401C; AD 402C; AD 403C; AD 404C; AD 405C; or AD 414C	3
Art and Design History elective (AD300- or AD400- level)	3
Liberal Arts electives (at least six credits must be AD 300- or AD 400-level)	12
Total	120

Art Major - Art Education Specialization (BA)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
To include PSYC 102; EDUC 211; EDUC 214.	
Requirements for Specialization in Art Education	
Foundation requirements: AD 100A; AD 100B ; AD 110; AD 120; three from AD 101; AD 207A; AD 207B and/or AD 207C	(9) + 12
Studio requirements: AD 210; AD 202; AD 203; AD 204; AD 219	15
Art education requirements: AD 208; AD 308; AD 318; AD 328; AD 338	15
Studio and/or Art Education electives	13
Professional Education Requirements	24
Total	120

Art Minor

A total of 21 hours is required for the minor. The student must complete AD 100A, AD 100B, and two from AD 207A, AD 207B, or AD 207C for 12 hours and may then elect studio or art history courses for the remaining nine hours. Transfer students must have taken at least 12 credit hours of art coursework at SIU in order to obtain a minor.

Art Education Minor

A total of 21 credit hours is required for the minor. The student must complete AD 100A, AD 100B, AD 208, AD 318 and AD 459 for 15 hours and may then select one art education elective from AD 308, AD 328 or AD 338 in addition to one studio elective of their choice.

Art History Minor

A minor consists of 18 credit hours of art history coursework. Students are strongly encouraged to take AD 207A, AD 207B, and AD 207C, which serve as prerequisites for many 300- and 400-level art history courses. Transfer students must have taken at least nine credit hours of art history coursework at SIU Carbondale in order to obtain a minor.

Industrial Design Minor

A total of 15 credit hours is required for the minor. The student must complete Art and Design 213, 223, 313, 337, and 339. Students enrolled in the Industrial Design minor may need to purchase computer hardware and/or software to meet minimum course requirements.

Art and Design Courses

AD100A - Foundation Studio A 100A-3 Foundation Studio A. (University Core Curriculum) A fundamental class with emphasis on contemporary and traditional two-dimensional processes, concepts and materials. Students will also experiment with digital and time-based work. Projects are designed to introduce and fuse content, skill and composition. Emphasis will be placed on solving visual problems and thinking critically and creatively. Incidental expenses will be incurred. Studio fee: \$30.

AD100B - Foundation Studio B 100B-3 Foundation Studio B. (University Core Curriculum) A fundamental class with emphasis on contemporary and traditional three-dimensional processes, concepts and materials. Projects are designed to introduce and fuse content, skill and the principles of design and composition. Emphasis will be placed on solving visual problems and thinking critically, analytically and creatively. Incidental expenses will be incurred. Studio fee: \$30.

AD101 - Intro to Visual Culture 101-3 Introduction to Visual Culture. (University Core Curriculum) [IAI Course: F2 900] This course teaches students how to analyze the visual world around them. The focus is on contemporary visual culture-from art to advertising, from the moving image to cyberspace. Students will interrogate many varieties of visual forms and consider the different viewing contexts, historical antecedents and cultural differences that condition their experience of the visual world.

AD110 - Intro to Drawing I 110-3 Introduction to Drawing I. Designed to help the student experience the concepts and processes that constitute the language of graphic expression. The goal is a working understanding of the still life. Incidental expenses required. Studio fee: \$20.

AD120 - Intro to Drawing II 120-3 Introduction to Drawing II. Designed to help the student experience the concepts and processes that constitute the language of graphic expression. The goal is a working understanding of inanimate and animate forms in space. Incidental expenses required. Prerequisite: C or better in AD 110. Studio fee: \$20.

AD122 - Communication Drawing 122-3 Communication Drawing. Drawing for communication: theoretical and applied concepts in drawing line, shape, form, perspective and color of images in a representational format. Prerequisite: C or better in AD 110. Studio fee: \$30.

AD200 - Intro to Drawing III 200-3 Introduction to Drawing III. Concerned with the introduction to various media, compositional devices, spatial investigation, and the human figure. Incidental expenses not to exceed \$75. Prerequisite: C or better in AD 120. Studio fee: \$60.

AD201 - Introduction to Painting 201-3 Introduction to Painting. Emphasizing material, techniques, processes, and ideas fundamental to the discipline of painting. Prerequisite: C or better in AD 110. Studio fee: \$25. Incidental expenses not to exceed \$100.

AD202 - Introduction to Printmaking 202-3 Introduction to Printmaking. Lectures and films on the basic printmaking processes: relief, intaglio, plano graphic, stencil, and cast paper. Emphasis on studio lab work in relief and intaglio printmaking processes. Prerequisites for art majors: C or better in AD 100A, AD 110. Studio fee: \$60. Incidental expenses not to exceed \$35.

AD203 - Beginning Sculpture 203-3 Beginning Sculpture. Emphasis experience in materials, techniques, processes, and ideas fundamental to the discipline of sculpture. Prerequisite: C or better in AD 100A,B. Studio fee: \$50. Incidental expenses will be incurred.

AD204 - Beginning Ceramics 204-3 Beginning Ceramics. Introduction to ceramic forming techniques of hand building and throwing on the potter's wheel. Students will explore traditional methods of ceramic form construction and will develop fundamental building skills through dialogue, projects, and problem-solving experiences. Studio fee: \$75. Incidental expenses not to exceed \$15.

AD205 - Begin Jewelry & Metalsmithing 205-3 Beginning Jewelry and Metalsmithing. An introduction to the fundamental skills and technology of jewelry and metalsmithing through practical experience. The properties of the medium will be explored and a survey of the field will be made. Prerequisite: C or better in AD 100A,B. Studio fee: \$75. Incidental expenses not to exceed \$10.

AD207A - Intro to Art History I 207A-3 Introduction to Art History I. (University Core Curriculum course) [IAI Course: F2 901] Introduces the history of ancient art from around the world: Mesopotamia and Persia, Egypt and Etruria, Greece and Rome, as well as early art from Asia and Africa. Key examples of art, architecture, and material culture are studied in their social and historical contexts, with consideration of issues of style, subject matter, meaning, technique and aesthetics.

AD207B - Intro to Art History II 207B-3 Introduction to Art History II. (University Core Curriculum course) Introduces the history of art around the world from Byzantium to the High Renaissance, as well as North and South America. Key examples of art, architecture, and material culture are studied in their social and historical contexts, with consideration of issues of style, subject matter, meaning, technique and aesthetics.

AD207C - Intro to Art History III 207C-3 Introduction to Art History III. (University Core Curriculum course) Introduces the history of art around the world from the seventeenth century to the present in Europe and North America and from 1300 to the present in Asia. Key examples of art, architecture, and material culture are studied in their social and historical contexts, with consideration of issues of style, subject matter, meaning, technique and aesthetics.

AD208 - Intro to Art Education 208-4 Introduction to Art Education. A required course for those considering art education as a major or minor, but open to all students interested in lifelong learning through art. Requirements include reading, writing, discussion, and art making. Areas of focus include introduction to careers in art education (schools and alternative settings), development of an art teaching portfolio, and service learning experiences. Service learning includes team-teaching seven Saturdays at the Saturday Young Artist Workshop. Studio and community outreach fee: \$30.

AD213 - ID Materials & Processes 213-3 Industrial Design Basic Materials and Processes. This studio and lecture course is an introduction to the Industrial Design process. The first half features basic ID theory and practice via a series of introductory design process assignments. The second half contains increasingly complex assignments. All will utilize 2D and 3D techniques that will include the use of shop

equipment and various materials. Portfolio review at course end. Prerequisites: C or better in AD 100A and AD 100B. Lab fee: \$100.

AD214 - Glass Survey 214-3 Glass Survey. Introduction to a variety of glass techniques, including hot glass blowing, cold working, and kiln forming. This beginning-level studio course is essential to understanding the artistic, architectural, design, and industrial application of glass. The course surveys the history of glass, modern and contemporary glass techniques, and contemporary art utilizing glass. This course is a hands-on studio course that includes demonstrations and exercises. Prerequisites: AD 100A, AD 100B with a grade of C, or consent of instructor. Studio fee: \$60.

AD219 - Beginning Digital Art & Design 219-3 Beginning Digital Art and Design. This class will introduce students to the computer as a tool for both creative visual production and for professional self-promotion. All aspects of the course are centered on improving the quality of the individual's artwork. Students will employ digital applications to utilize, improve and apply their 2-dimensional design fundamentals and conceptual thinking. Workshop fee: \$75.

AD222 - Typography I 222-3 Typography I. Introduction to digital typography through letterforms, spacing, layout and communication. Theoretical exercises in spatial and textural qualities of type. Problems in tension, activation and balance. Simple typographical applications, basic history of typography, and portfolio preparation. Studio fee: \$30.

AD223 - Rendering and Graphics 223-3 Rendering and Graphics. An introduction to the techniques and materials used by industrial designers to two-dimensionally represent three-dimensional conceptual ideas. Students develop skills in drawing and rendering with pencils, markers, pastels, and airbrush. Emphasis is placed on understanding the significance of color and graphic applications for industrial design. Studio fee: \$50.

AD227 - History African American Art 227-3 History of African American Art. (Same as AFR 227) (University Core Curriculum) [IAI Course: F2 906D] A history of African American visual arts, with a brief examination of the arts of various nations of Africa and how they affected art in America. Craft arts, architecture, painting and sculpture will be considered from the slave trade era to the Civil War era; the Harlem Renaissance and other 20th Century movements to the present day.

AD249 - Design Process & Presentation 249-3 Design Process and Presentation. Emphasis on basic design principles, design process, terminology, methods and presentation. Transition from theoretical to applied problems. Portfolio preparation. Overview of professional realities (social, ethical and legal) in communication design. Studio fee: \$30.

AD257 - Work Experience 257-1 to 30 Work Experience. Credit for concurrent or non-structured work performed which is related to the student's educational objective. Credit to be granted by department evaluation. Mandatory Pass/Fail.

AD258 - Work Experience 258-1 to 30 Work Experience. Credit for past work performed which is related to the student's educational objective. Credit to be granted by departmental evaluation. No grade for past work experience.

AD267 - Picturing Difference 267-3 Picturing Difference: Identity and Representation in Visual Culture. (University Core Curriculum) This course examines how individual and group identities such as gender, sexuality, race, and ethnicity are represented and resisted in visual culture.

AD300 - Intermed 2D Studio Drawing 300-9 (3,3,3) Intermediate 2-D Studio - Drawing. This course is designed to develop an inventive and experimental approach to a variety of media, subjects, and topics in drawing (instructor defines the topic); to explore more advanced problems with an emphasis on creative interpretation; to guide students in the process of developing ideas; and to build skill with a variety of media and subjects in drawing. Studio fee: \$60. Expenses may exceed \$100.

AD301A - Intermed 2D Studio Painting 301A-3 Intermediate 2-D Studio - Painting. An inventive and experimental approach to a variety of media, subjects, and topics (instructor determines topic); to explore more advanced problems with an emphasis on creative interpretation; to guide students in the process of developing ideas; and to build skill with a variety of media and subjects. Studio Fee: \$80. Expenses may exceed \$100.

AD301B - Intermed 2D Studio Painting 301B-3 Intermediate 2-D Studio - Painting. An inventive and experimental approach to a variety of media, subjects, and topics (instructor determines topic); to explore more advanced problems with an emphasis on creative interpretation; to guide students in the process of developing ideas; and to build skill with a variety of media and subjects. Studio Fee: \$25. Expenses may exceed \$100.

AD301C - Intermed 2D Studio Painting 301C-3 Intermediate 2-D Studio - Painting. An inventive and experimental approach to a variety of media, subjects, and topics (instructor determines topic); to explore more advanced problems with an emphasis on creative interpretation; to guide students in the process of developing ideas; and to build skill with a variety of media and subjects. Studio fee: \$25. Expenses may exceed \$100.

AD302A - Beginning Etching 302A-3 Beginning Etching. Introduction to the basic processes of intaglio printmaking, including etching, aquatint, engraving, and drypoint. Emphasis will be placed on black and white printing. Studio fee: \$75. Incidental expenses not to exceed \$50.

AD302B - Beginning Lithography 302B-3 Beginning Lithography. Introduction to the history and basic processes of lithography, including use of stone and plate. Emphasis will be on black and white printing. Studio fee: \$85. Incidental expenses not to exceed \$45.

AD302C - Beginning Screen Printing 302C-3 Beginning Screen Printing. Introduction to the basic processes and history of screen printing, including hand and photographic stencil-making techniques. Studio fee: \$95. Incidental expenses not to exceed \$45.

AD302D - Beginning Woodcut 302D-3 Beginning Woodcut. Introduction to the basic processes and history of woodcut printmaking; including single color (block) printing, reduction printing, multiple block printing and intaglio/relief printing. Studio fee: \$75.

AD303 - Intermediate Sculpture 303-9 (3,3,3) Intermediate Sculpture. A studio orientation to tools, techniques, materials, and problems involved in historical and contemporary sculpture. Metal fabrication, figure, wood and stone carving, and plaster fabrication will be emphasized. Prerequisite: C or better in AD 203. Studio fee: \$60. Incidental expenses will be incurred.

AD304A - Intermediate Ceramics 304A-3 Intermediate Ceramics. Focuses on structured problems designed to encourage the student to apply basic forming skills experienced at the introductory level. Pottery shapes requiring singular and multiple form components will be investigated and simple glazing techniques will be introduced. Prerequisite: C or better in AD 204. Studio fee: \$75.

AD304B - Intermediate Ceramics 304B-3 Intermediate Ceramics. Stresses studio problems of a group nature and introduces glaze calculation as both theory and a practical tool. Personal and creative interpretation of assignments; some problems requiring group effort. Must be taken in A,B sequence. Prerequisite: C or better in AD 304A. Studio fee: \$75. Incidental expenses not to exceed \$10 for each section.

AD305A - Intermediate Metalsmithing 305A-3 Intermediate Metalsmithing. Exploration of various processes emphasizing the diversity of the technical possibilities within the discipline of metalsmithing. Studio fee: \$80.

AD305B - Intermediate Metalsmithing 305B-3 Intermediate Metalsmithing. Emphasis placed on the use of these processes to develop individual styles. Prerequisite: C or better in AD 305A. Studio fee: \$80. Incidental expenses not to exceed \$25 for each section.

AD307I - Women in the Visual Arts 307I-3 Women in Visual Arts: Social and Educational Contexts. (Same as WGSS 307I) (University Core Curriculum) This interdisciplinary course examines women's lives as artists, visual representations of women, and issues of gender distinction in the history of Western art from the medieval period to the present. From perspectives that include social history and cultural anthropology as well as both traditional and feminist art history, the course considers the ways in which the experiences of women and opportunities available to them have historically differed from those of men. The course examines how such differences have affected the emphases, subject matter, and traditions of women's art as well as the ways in which women have been represented.

AD308 - Philosophies of Art Education 308-3 Artistic Inquiry, Histories & Philosophies of Art Education. Students develop an understanding of the major theoretical and philosophical issues in art education and develop a personal philosophy of art education. Requirements include reading, writing, research, discussion, and a group exhibition. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for art majors. Prerequisite: AD 208 with a grade of C or concurrent enrollment. Studio supply fee: \$30.

AD309 - Independent Study 309-1 to 12 Independent Study. To be used by majors in the School of Art and Design to pursue independent research activities. Prerequisite: AD 100A, 100B, 110, 120, 207A, 207B, and 207C.

AD310A - Greco-Roman Art: Greece 310A-3 Greco-Roman Art and Archaeology: Ancient Greece. (Same as ANTH 430D, CLAS 310A, CLAS 310HA) This course introduces students to the art, architecture, and other physical remains of the ancient Greeks and Romans as a means of gaining insight into their culture: their conceptions of gods and heroes, their social identities and political values, their everyday rhythms of work and leisure, their views of life, their attitudes towards the afterlife. This will require that we turn our eye to a wide variety of objects-statues and sarcophagi, paintings and pottery, buildings public and private-and consider everything from the most imposing and bombastic forms of art to the most whimsical and quirky: from cult images in majestic temples to raunchy paintings in notorious brothels, from monumental theaters and amphitheaters to secluded private interiors and family tombs, from epic historical scenes glorifying human conquerors to fantastic mythological scenes celebrating gods and heroes, satyrs and nymphs, the divine and the dead. Topics will vary.

AD310B - Greco-Roman Art: Rome 310B-3 Greco-Roman Art and Archaeology: Ancient Rome. (Same as ANTH 430D, CLAS 310B, CLAS 310HB) This course introduces students to the art, architecture, and other physical means of the ancient Greeks and Romans as a means of gaining insight into their culture: their conceptions of gods and heroes, their social identities and political values, their everyday rhythms of work and leisure, their views of life, their attitudes towards the afterlife. This will require that we turn our eye to a wide variety of objects-statues and sarcophagi, paintings and pottery, buildings public and private-and consider everything from the most imposing and bombastic forms of art to the most whimsical and quirky: from cult images in majestic temples to raunchy paintings in notorious brothels, from monumental theaters and amphitheaters to secluded private interiors and family tombs, from epic historical scenes glorifying human conquerors to fantastic mythological scenes celebrating gods and heroes, satyrs and nymphs, the divine and the dead. Topics will vary.

AD310C - Greco-Roman Art 310C-3 Greco-Roman Art and Archaeology: Ancient Greece and Rome. (Same as ANTH 430D, CLAS 310C, CLAS 310HC) This course introduces students to the art, architecture, and other physical remains of the ancient Greeks and Romans as a means of gaining insight into their culture: their conceptions of gods and heroes, their social identities and political values, their everyday rhythms of work and leisure, their views of life, their attitudes towards the afterlife. This will require that we turn our eye to a wide variety of objects-statues and sarcophagi, paintings and pottery, buildings public and private-and consider everything from the most imposing and bombastic forms of art to the most whimsical and quirky: from cult images in majestic temples to raunchy paintings in notorious brothels, from monumental theaters and amphitheaters to secluded private interiors and family tombs, from epic historical scenes glorifying human conquerors to fantastic mythological scenes celebrating gods and heroes, satyrs and nymphs, the divine and the dead. Topics will vary.

AD311 - Medieval and Gothic Art 311-3 Medieval and Gothic Art. Medieval art from the 4th to the 15th Century in Western Europe. Examination of selected art objects in terms of media and techniques, iconography, function and cultural milieu.

AD312 - Renaissance Art 312-3 Renaissance Art. This course will introduce students to paintings, sculpture, and architecture created in Europe between 1300-1600.

AD313 - Computer-Aided Indus Design 313-3 Computer-Aided Industrial Design. A computer course focused on learning and utilizing two- and three-dimensional data, drawing and modeling software and applications in the industrial design process. Includes: programming theory, 3-D modeling, design for manufacturing assembly and disassembly, product planning, graphics, detailing, assembly drawings, and bill of materials. Prerequisites: C or better in AD 213, AD 219, and AD 223. Studio fee: \$60.

AD314A - Kiln-Formed Glass 314A-3 Kiln-Formed Glass. This course explores glass as a material for sculpture, architectural elements such as lighting and windows, and design utilizing glass forming techniques with different types of glass. This is a hands-on studio course that includes demonstrations and exercises on design, process planning, resource research, and a variety of glass forming techniques. Prerequisite: C or better in AD 214 or consent of instructor. Studio fee: \$100.

AD314B - Kiln-Formed Glass 314B-3 Kiln-Formed Glass. Extension of experiences in (A) with in-depth development of the students' independence in the kiln-forming process. Includes various mold-making methods, casting techniques, kiln firing, annealing, and finishing cold-working processes. Prerequisite: C or better in AD 314A or consent of instructor. Studio fee: \$100.

AD315 - Native North American Art 315-3 Native North American Art. Arts and material culture of traditional Native North American cultures, including the Northeast, Woodland and Mississippian areas, Plains, Southwest, West, Northwest Coast, Arctic and Sub-Arctic. Fiber arts, sculpture, architecture, ceramics, metals, beads, role of the arts.

AD316 - Eighteenth-Century Art 316-3 Eighteenth-Century Art. This course explores an extraordinary period in the arts in which experimentation and innovation produced some of the most peculiar objects in the history of art. We shall study a wide range of media, from painting, sculpture and architecture to porcelain, furniture, wax, and shells, as well as the art historical styles of the Rococo, Neoclassicism, and Romanticism. Since the 18th Century was an age of global expansion and cross-cultural contact, this course examines the visual and material culture of Europe specifically in relation to other parts of the world, particularly Asia and the Americas.

AD317I - Contemp Native Amer Art 317I-3 Contemporary Native American Art: Anthropological Perspective. (University Core Curriculum) This interdisciplinary course considers contemporary Native American art and the social forces that have shaped it. Native American artistic traditions and the centrality of art to Native American life and culture will be addressed with an emphasis on 20th-century artists who have shaped the contemporary Native American art movement.

AD318 - Art Curriculum Building 318-3 Curriculum Building with Art. Prepares students to organize art resources, materials, and concepts into effective art learning experiences. Requirements include readings and discussions on contemporary curriculum, the development of a differentiated unit plan with assessment, along with service learning experiences in the field. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for art majors. Prerequisite: C or better in AD 208 or concurrent enrollment. Studio fee: \$30.

AD319 - Intro to Museology 319-3 Introduction to Museology. A survey of museum and gallery techniques (emphasis upon practical exhibit development) which will involve answering questions concerning contractual agreements, taxes, insurance, packing, shipping, exhibit design and installation, record systems, general handling, public relations, and sale of art works directed toward problems encountered by the artist outside the privacy of the studio.

AD320 - African Arts 320-3 African Arts. Covers a broad range of the arts primarily of west and central Africa, as well as north, south, and east Africa. Includes sculpture, masking and performance, body decoration and textiles, and architecture. Shows how arts are used in the daily life of traditional village societies in these areas.

AD322 - Print Technology 322-3 Print Technology. Emphasis on preparing design concepts to digital format for production or digital output for a variety of different purposes. Includes pre-press methods, file formatting, trapping, color separations and current reproduction methods. Prerequisite: C or better in AD 222 and AD 249. Studio/software fee: \$30.

AD323 - Industrial Design Analysis 323-3 Industrial Design Analysis. An introduction to the full industrial design process including ideation, consumer safety, environmental impact, and consumer research with an emphasis on human interface issues. Students learn to apply the ID process through a series of specific projects, including participation in a national design competition. Prerequisite: C or better in AD 213 and AD 223. Material fee: \$50.

AD328 - Artistic Growth of Children 328-3 Artistic Growth of Children. Prepares students to understand the artistic growth of the learner (0-12 years) through readings, discussion, and studio practice. Areas of

focus include teaching strategies and methods and lesson plan development in conjunction with clinical field experiences and/or service learning. Prerequisite: C or better in AD 208 or concurrent enrollment. Studio fee: \$45.

AD330 - Greek Myth in Ancient Art 330-3 Greek Myth in Ancient Art. (Same as CLAS 330) Ancient Greeks and Romans lived in a visual world—a world flooded with mythological imagery. This course examines how Greeks and Romans themselves processed their own mythology, inhabited it, and gave it visual form. This will involve reading some of the most important mythological narratives to survive from the ancient world (from Homer's *Odyssey* to Ovid's *Metamorphoses*). But our main focus will be on how these epic stories were translated into artistic terms, structuring the everyday consciousness of the women and men who dwelled amidst these images and imagined their own lives through them. Objects examined include racy Greek painted pottery, epic Greek architectural (especially temple) sculpture, bombastic Greek and Roman civic monuments, intimate Roman wall paintings, and astonishing Roman sarcophagi. Prerequisites: a previous course in the mythology, history, philosophy, civilization, or art of the ancient world (passed with a C or better), or consent of instructor.

AD332 - Computer Graphics 332-3 Computer Graphics. Design and development of interactive media for the web through technical and design projects. Covers core concepts of web production, web design standards, and interactive and multimedia design with a primary focus on web delivery. Students will become proficient with web authoring tools through building block exercises, classroom demonstrations, and readings. Students will complete and launch a portfolio website with text, image gallery, and animated elements. Prerequisite: C or better in AD 219. Software fee: \$75.

AD337 - Design Hist/Material Culture 337-3 The History of Things: Design and Material Culture. How did the things we live with come to look the way they do? What do those things say about us and our cultures? This course traces the history of designed objects from furniture, ceramics, and metalwork to advertisements, automobiles, and iPhones from around the world from the early modern period to the present day.

AD338 - Artistic Growth Adolsnt/Adult 338-3 Artistic Growth of Adolescents and Adults. Prepares students to understand the artistic growth of the learner through readings, discussion, and studio practice. Areas of focus include teaching strategies and methods and lesson plan development in conjunction with clinical field experiences. Prerequisite: AD 208 or concurrent enrollment. Studio fee: \$45.

AD347A - 20th Century Art 1900-1945 347A-3 Survey of 20th Century Art: 1900 to 1945. A survey of the major developments in painting, sculpture, architecture, and other selected areas of the visual arts from the late 19th century to 1945. These developments are studied in relation to other significant cultural, political, scientific, and philosophical events and ideas. Covers late 19th to mid-20th century.

AD347B - 20th Cent Art 1945-Present 347B-3 Survey of 20th Century Art: 1945 to the Present. A survey of the major developments in painting, sculpture, architecture, and other selected areas of the visual arts from 1945 to the present.

AD347C - Contemporary Art 347C-3 Contemporary Art. An examination of the style and meaning of contemporary art in relation to the current political, social, and cultural issues. Will include visual arts, architecture, and new media.

AD348 - Art for Classroom Teachers 348-3 Art for Classroom Teachers. A studio-based course that includes reading and discussion for non-art majors. Especially applicable to early childhood, elementary, inclusive, and special education programs. Introduction to uses and applications of art media, approaches to teaching art, artistic awareness, adaptation, and creative expression. Studio fee: \$45.

AD352 - Typography II 352-3 Typography II. Problems in composition; combining of typefaces, formats and their applications to a variety of design projects. Emphasis on grid development, multi-page documents. Basic introduction and hands-on experience with interaction/web graphics using creative processes and solutions. Portfolio preparation. Skill and content based. Prerequisite: C or better in AD 322 or concurrent enrollment. Studio fee: \$30.

AD355 - Seventeenth-Century Art 355-3 Seventeenth-Century Art. Art made in Europe in the seventeenth century was part of significant early-modern cultural trends including globalization, the rise of commercial culture, the theatrical and affective role of art, and the rise of scientific culture. These themes

shall be explored through Italian and Spanish Baroque painting, sculpture, and architecture as well as Dutch portraiture, still life, and genre scenes, French and Italian landscape painting, and art produced for international courts.

AD357 - Nineteenth-Century Art 357-3 Nineteenth-Century Art. This class focuses on the dual tendencies of tradition and progress that define the nineteenth century through a survey of its artistic, visual, and material culture. Radical social and technologic innovations were accompanied by profound changes in the arts. The discussion of specific artistic trends, from Romanticism, the Pre-Raphaelites and Arts and Crafts, to Realism, Impressionism, Post-Impressionism, and Symbolism, will be framed by examination of the changing conditions of art-making and art-selling, the shift from academic to studio-based art practice, as well as growing importance of the city and the urban experience.

AD358 - Art of Small Scale Cultures 358-3 Art of Small Scale Cultures. (Advanced University Core Curriculum course) Covers a broad range of arts of Africa, Native North America, Pre-Columbian America, Oceania, primarily sculpture in wood, metal and shell, body decoration and fibers, ceramics, architecture, masking and performance arts of small scale villages; role of the artist, ancient technologies.

AD363 - Product Development 363-3 Product Development. Investigation into project management; in-depth analysis of materials and processes; cost estimating; life cycle analysis as related to product environmental impacts; human factors and product interface content. Course parallels specific project work in AD 383 and must be taken concurrently. Corporate sponsored projects may be incorporated. Prerequisites: C or better in AD 313 and 323. Concurrent enrollment in AD 383. Studio fee: \$60.

AD368 - Pre-Columbian Art 368-3 Pre-Columbian Art. (Advanced University Core Curriculum course) Considers stone sculpture and architecture, fiber arts, ceramics, metal and 2-D arts of Meso-, Central, and South America of the Pre-Columbian era. Considers ancient technologies, hieroglyphic and calendrical systems; and some post contact arts.

AD372A - Graphic Design I 372A-3 to 6 Graphic Design I. Problems in promotional design applications including campaigns, packaging and advertising graphics. Emphasis is placed on professional realities, problem solving, and further development of creative design abilities. Studio fee: \$60.

AD372B - Graphic Design I 372B-3 to 6 Graphic Design I. Problems in physical game design applications including games ideation methods, game construction, playtesting, packaging, sales and promotional campaigns, and advertising graphics. Emphasis on professional realities, problem solving, and further development of creative design abilities. Studio fee: \$75.

AD383 - Practicum in Industrial Design 383-3 Practicum in Industrial Design. Advanced and comprehensive product design projects focusing on innovation and user needs. Projects may include corporate sponsors and/or interdisciplinary teams. Students will integrate research and 2D and 3D process documentation with additional focus on human factors and product interface. Course parallels work in AD 363 and must be taken concurrently. Prerequisites: C or better in AD 313 and 323. Concurrent enrollment in AD 363. Studio fee: \$60.

AD388 - Study Abroad 388-1 to 36 Study Abroad. Provides credit toward the undergraduate degree for study at an accredited foreign institution or approved overseas program. Final determination of credit is made on the student's completion of work.

AD389 - BFA Seminar 389-3 BFA Seminar. Class helps prepare BFA majors for life after school in the art world. Portfolio enhancement covered; work on resume, autobiographical, aesthetic and educational statements. Slide quality and gallery discussions also covered. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for art majors.

AD400A - Advanced 2D Studio Drawing 400A-3 to 6 Advanced 2D Studio - Drawing. Individual problem solving emphasizing technique and conceptual synthesis. Not for graduate credit. Prerequisite: C or better in 6 hours of AD 300. Studio fee: \$70. Expenses may exceed \$100 per course.

AD400B - Advanced 2D Studio Drawing 400B-3 to 6 Advanced 2D Studio - Drawing. Individual problem solving emphasizing technique and conceptual synthesis. Not for graduate credit. Prerequisite: C or better in 6 hours of AD 400A. Studio fee: \$70. Expenses may exceed \$100 per course.

AD400C - Drawing Senior Thesis 400C-3 Advanced 2D Studio - Drawing - Senior Thesis. Individual problem solving emphasizing technique and conceptual synthesis. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Not for graduate credit. Special approval needed from the instructor. Studio fee: \$80. Expenses may exceed \$100 per course.

AD400D - Advanced 2D Studio Drawing 400D-3 to 30 Advanced 2D Studio - Drawing. Individual problem solving emphasizing technique and conceptual synthesis. Prerequisite: C or better in 6 hours of AD 400B. Advisor approval required for graduate students. Studio fee: \$8 per credit hour. Expenses may exceed \$100 per course.

AD401A - Advanced 2D Studio Painting 401A-3 to 6 Advanced 2D Studio - Painting. Individual problem solving emphasizing technique and conceptual synthesis. Not for graduate credit. Prerequisite: C or better in 6 hours of AD 301. Studio fee: \$4 per credit hour. Expenses may exceed \$100 per course.

AD401B - Advanced 2D Studio Painting 401B-3 to 6 Advanced 2D Studio - Painting. Individual problem solving emphasizing technique and conceptual synthesis. Not for graduate credit. Prerequisite: C or better in 6 hours of AD 401A. Studio fee: \$4 per credit hour. Expenses may exceed \$100 per course.

AD401C - Painting Senior Thesis 401C-3 Advanced 2D Studio - Painting - Senior Thesis. Individual problem solving emphasizing technique and conceptual synthesis. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Not for graduate credit. Special approval needed from the instructor. Studio fee: \$80. Expenses may exceed \$100 per course.

AD401D - Advanced 2D Studio Painting 401D-3 to 30 Advanced 2D Studio - Painting. Individual problem solving emphasizing technique and conceptual synthesis. Prerequisite: C or better in 6 hours of AD 401B. Special approval needed from advisor for graduate students. Studio fee: \$4 per credit hour. Expenses may exceed \$100 per course.

AD402A - Advanced Printmaking I 402A-3 to 6 Advanced Printmaking I. Advanced techniques in printmaking to include intense work in color printing. Not for graduate credit. Prerequisite: C or better in AD 302-6 hours. Studio fee: \$20 per credit hour enrolled. Incidental expenses may exceed \$50 for each section.

AD402B - Advanced Printmaking I 402B-3 to 6 Advanced Printmaking I. Individual research with emphasis on history, processes, and ideas which lead to the formation of personal content. Not for graduate credit. Prerequisite: 6 hours of C or better in AD 402A. Studio fee: \$20 per credit hour enrolled. Incidental expenses may exceed \$50 for each section.

AD402C - Printmaking Senior Thesis 402C-3 Advanced Printmaking I-Senior Thesis. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Not for graduate credit. Studio fee: \$30 per credit hour enrolled. Special approval needed from the instructor. Incidental expenses may exceed \$50 for each section.

AD402D - Advanced Printmaking I 402D-3 to 30 Advanced Printmaking I. Independent study in printmaking. Prerequisite: 6 hours of C or better in AD 402B. Special approval needed from advisor for graduate students. Studio fee: \$20 per credit hour enrolled. Incidental expenses may exceed \$50 for each section.

AD403A - Advanced Sculpture I 403A-3 to 6 Advanced Sculpture I. Foundry techniques and direct metal fabrication. Not for graduate credit. Prerequisite: C or better in AD 303-6 hours. Incidental expenses will be incurred. Studio fee: \$20 per credit hour.

AD403B - Advanced Sculpture I 403B-3 to 6 Advanced Sculpture I. Individual research with emphasis on history, materials, processes, and ideas that form personal content. Not for graduate credit. Prerequisite: 6 hours of C or better in AD 403A. Incidental expenses will be incurred. Studio fee: \$20 per credit hour.

AD403C - Sculpture Senior Thesis 403C-3 Advanced Sculpture I-Senior Thesis. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Not for graduate credit. Special approval needed from the instructor. Incidental expenses will be incurred. Studio fee: \$30 per credit hour.

AD403D - Advanced Sculpture I 403D-3 to 30 Advanced Sculpture I. Independent study in sculpture. Prerequisite: 6 hours of C or better in AD 403B. Special approval needed from advisor for graduate students. Incidental expenses will be incurred. Studio fee: \$20 per credit hour.

AD404A - Advanced Ceramics I 404A-3 Advanced Ceramics I. Assigned individual problems with emphasis on ceramic form and glazing. Not for graduate credit. Prerequisite: C or better in AD 304A,B. Studio fee: \$50 per credit hour enrolled.

AD404B - Advanced Ceramics I 404B-3 to 6 Advanced Ceramics I. Individual research with emphasis on kiln theory and design. Not for graduate credit. Prerequisite: C or better in AD 404A. Studio fee: \$40 per credit hour enrolled.

AD404C - Ceramics-Senior Thesis 404C-3 Advanced Ceramics I-Senior Thesis. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Not for graduate credit. Must be taken concurrently with AD 404D. Special approval needed from the instructor. Studio fee: \$55 per credit hour enrolled.

AD404D - Advanced Ceramics I 404D-3 to 30 Advanced Ceramics I. Independent study in ceramics. Prerequisite: 6 hours of C or better in AD 404B. Special approval needed from advisor for graduate students. Studio fee: \$40 per credit hour enrolled.

AD405A - Advanced Metalsmithing I 405A-3 Advanced Metalsmithing. Emphasis will be placed on advanced processes to develop individual expression. Not for graduate credit. Prerequisite: C or better in AD 305A,B. Studio fee: \$120. Incidental expenses may exceed \$75 for each section and may be slightly higher for blacksmithing.

AD405B - Advanced Metalsmithing 405B-3 to 6 Advanced Metalsmithing. Media exploration to develop individual styles. Not for graduate credit. Prerequisite: C or better in AD 405A. Studio fee: \$90. Incidental expenses may exceed \$75 for each section and may be slightly higher for blacksmithing.

AD405C - Metals Senior Thesis 405C-3 Advanced Metalsmithing-Senior Thesis. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Not for graduate credit. Special approval needed from the instructor. Studio fee: \$40 per credit hour enrolled. Incidental expenses may exceed \$75 for each section and may be slightly higher for blacksmithing.

AD405D - Advanced Metalsmithing I 405D-3 to 30 Advanced Metalsmithing I. Independent study in metalsmithing. Prerequisite: 6 hours of C or better in AD 405B. Special approval needed from advisor for graduate students. Studio fee: \$20 per credit hour enrolled. Incidental expenses may exceed \$75 for each section and may be slightly higher for blacksmithing.

AD414A - Advanced Glass I 414A-3 Advanced Glass I. Introduction to fundamental techniques of hot glass blowing. This course focuses on understanding the basics of hot glass material and processes. Not for graduate credit. Prerequisite: C or better in AD 214 or consent of instructor. Studio fee: \$60 per credit hour enrolled.

AD414B - Advanced Glass I 414B-3 to 6 Advanced Glass I. Emphasis on development of individual work with glass medium and exercises on high degree of commitment and independence. Students will be expected to explore and expand their skills and concepts. Students will exercise a variety of glass techniques and hands-on skills. The course will also emphasize learning essential skills to be successful studio artists, including resource research, presentation, and critiques. Not for graduate credit. Prerequisite: C or better in AD 414A. Studio fee: \$80 per credit hour enrolled.

AD414C - Glass Senior Thesis 414C-3 Advanced Glass I-Senior Thesis. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Not for graduate credit. Must be taken concurrently with AD 414D. Special approval needed from the instructor. Studio fee: \$65 per credit hour enrolled.

AD414D - Advanced Glass I 414D-3 to 30 Advanced Glass I. Students will focus on studio practice and develop a mature body of work. With faculty guidance, students will identify concepts for an intensive level of visual research based on individual interests and commitments. Undergraduate students in this course will focus on creating a body of work for their senior thesis exhibition. Preparation for professional practices and graduation requirements, including individual portfolio presentation, slide portfolio, artist's statement, and senior thesis exhibition. This course is offered to graduate students who are interested in

advanced and/or interdisciplinary research using glass. Prerequisite: C or better in 6 hours of AD 414B. Studio fee: \$80 per credit hour enrolled.

AD423 - ID Research & Prof Practice 423-6 Industrial Design Research and Professional Practice. This studio course develops the student's ability to conduct in-depth design research and to explore new needs and trends relating design to society. Additionally, students explore professional practice issues of designer/client, specific design business practices, and ethics. Graduate students will contextualize and execute multifaceted, research-driven problems, requirements include: creation/incorporation of design briefs and professional proposals with outcome solutions to include written research documentation. Undergraduates are restricted to senior standing or consent of instructor, with prerequisite: C or better in AD 363, 383. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Studio Fee: \$50.

AD424 - Ceramic Design 424-3 Ceramic Design. Ceramic Design focuses on three-dimensional design principles concerning form, surface, and function. The objective of this course is to serve as an introduction to the basic fundamentals of design through working with the ceramic medium. A series of demonstrations will provide basic exposure to technical aspects related to prototyping, plaster mold-making, slip-casting, glazing, and firing. The ideas and activities presented here are meant to develop facility in visualization, organization, and creative problem solving; to gain a greater appreciation for the broad visual culture we call art. Material fee: \$65.

AD432 - 3D Modeling & Visualization 432-3 3D Modeling and Visualization. Studio art course focusing on 3D software for modeling, rendering, and visualizing objects and environments. Projects include various 3D modeling methods and rendering techniques for 2D and 3D output for print, screen, and rapid prototyping equipment. Studio fee: \$85.

AD433 - Working with Wood 433-3 Understanding & Working with Wood. An exploration of wood as material through the use of hand tools and woodworking machines. Applications include utilitarian as well as art objects. Repeatable for a maximum of 6 hours toward degree. Studio fee: \$25.

AD442 - Moving Image Art 442-3 Moving Image Art. Project-based studio art course focusing on broadening the range of digital imaging through the integration of multi-media elements including animation, video, and sound. Prerequisite: AD 219. Studio fee: \$20.

AD450A - Museum Studies-Learning 450A-3 Museum Studies-Learning in Museums. (Same as ANTH 450A) A detailed study of museums in the context of their use of exhibitions as an educational medium. Covers the evolution of the museum as a learning environment and the application of learning theory and principles in modern museums. Emphasis is placed on practicum experiences involving the design of learning experiences and educational programs in the museum setting.

AD451 - CAD & S.A.M. Lab 451-3 CAD & S.A.M. Lab. This course instructs participants how to use software and hardware required for rapid prototyping and the fabrication equipment currently available in the S.A.M. Lab (Subtractive Additive Maker Lab). Students will learn 2D and 3D modeling, with the objective to create physical outcomes.

AD452 - Graphic Design II 452-3 to 6 Graphic Design II. Multifaceted problems with emphasis on continuity of design in more than one medium or format. Client-based projects, environmental graphics and identity issues in design. Professional proposals and portfolio preparation. Graduate student requirements include multifaceted problems incorporating design briefs/professional proposals with outcome solutions to include written research documentation; no text requirements. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Undergraduate prerequisites: C or better in AD 322, 337, and 352. Studio fee: \$30.

AD459 - Internship 459-1 to 6 Internship. Supervised work experience related to student's academic program and career objectives. Not repeatable for credit. Not for graduate credit. Special approval needed from design area head. Mandatory Pass/Fail.

AD472 - Graphic Design III 472-3 to 6 Graphic Design III. Special study in current communication design topics. Selected topics will vary with emphasis on studio problems and concept development. Applied problems in advanced digital technologies may include interaction/motion and/or web design. Portfolio preparation. Graduate student requirements: Prepare and present a paper on a specific digital

technology, interaction, motion, or web design topic of their choosing. Prerequisites: C or better in AD 322, 332, 337, and 352. Studio fee: \$30.

AD489A - Senior Thesis-Industrial Design 489A-4 Senior Thesis-Industrial Design. The culminating experience for majors. Creative project development individualized by the student with a professional sponsor. Develops students' portfolios and professional practice contacts and prepares students for interviewing, etc. Not for graduate credit. Prerequisite: C or better in AD 423. Restricted to senior standing. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement. Studio fee: \$40.

AD489B - Senior Thesis-Art History 489B-3 Senior Thesis-Art History. Substantial research paper written in consultation with an art history faculty member. Not for graduate credit. Permission of the instructor required. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement.

AD489C - Senior Thesis 489C-3 to 6 Senior Thesis. The culminating experience for majors. Thesis for general design. In-depth design project chosen by student in consultation with a faculty member. Not for graduate credit. Restricted to senior standing. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement.

AD489D - Senior Thesis 489D-4 Senior Thesis-Communication Design. Design capstone for communication design. Development of senior thesis project with formal promotion and documentation. Exhibition. Not for graduate credit. Restricted to senior standing. Special approval needed from the instructor. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement.

AD497A - Ancient or Medieval Art 497A-3 to 6 Research Seminar in Art History-Ancient or Medieval Art. A close examination of the history of art and visual culture from Ancient or Medieval periods and regions. In addition to reading and discussion on a specific topic, this class also focuses on the methods and process of conducting a research project. May be repeated for credit as topics will vary. Prerequisites: AD 207A; graduate status; or permission of instructor. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement.

AD497B - Early Modern Art 1400-1800 497B-3 to 6 Research Seminar in Art History-Early Modern Art (1400-1800). A close examination of the history of art and visual culture from Early Modern (1400-1800) periods and regions. In addition to reading and discussion on a specific topic, this class also focuses on the methods and process of conducting a research project. May be repeated for credit as topics will vary. Prerequisites: AD 207B and AD 207C; graduate status; or permission of instructor. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement.

AD497C - Modern/Contemporary Art 497C-3 to 6 Research Seminar in Art History-Modern and Contemporary Art. A close examination of the history of art and visual culture from Modern and Contemporary periods and regions. In addition to reading and discussion on a specific topic, this class also focuses on the methods and process of conducting a research project. May be repeated for credit as topics will vary. Prerequisites: AD 207C and either one of AD 207A or AD 207B; graduate status; or permission of instructor. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement.

AD497D - Selected Topics-Art History 497D-3 to 6 Research Seminar in Art History-Selected Topics. A close examination of the history of art and visual culture from selected periods and regions. In addition to reading and discussion on a specific topic, this class also focuses on the methods and process of conducting a research project. May be repeated for credit as topics will vary. Prerequisites: Two from either AD 207A, AD 207B, or AD 207C; graduate status; or permission of instructor. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement.

AD499 - Individual Problems 499-1 to 21 Individual Problems. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Designed to adapt to students' individual needs in problem research. Restricted to senior standing in the School of Art and Design. Prerequisite: an overall 3.0 GPA. Special approval needed from the instructor.

AD500 - Advanced Drawing II 500-3 to 21 Advanced Drawing II. A studio directed toward individual research in the student's major field. Emphasis is placed upon the historical materials, processes and

ideas that form the content and experience of the student's major field. Special approval needed from the adviser. Studio fee: \$25.

AD501 - Advanced Painting II 501-3 to 21 Advanced Painting II. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Special approval needed from the adviser.

AD502 - Advanced Printmaking II 502-3 to 21 Advanced Printmaking II. Advanced studio course in printmaking directed toward individual research in the student's choice of print media. Emphasis is on the processes, which lead to the formation of personal content. Special approval needed from the adviser. Studio fee: \$20 per credit hour enrolled.

AD503 - Advanced Sculpture II 503-3 to 21 Advanced Sculpture II. Advanced studio course based upon focused individual research in the student's chosen media. Students develop a personal aesthetic in relation to the field of sculpture through technical accomplishment, intensive output, and engagement in rigorous critique. Special approval needed from the adviser. Incidental expenses may exceed \$100. Studio fee: \$20 per credit hour.

AD504 - Advanced Ceramics II 504-3 to 21 Advanced Ceramics II. Art studio course directed toward individual research in the student's major field. Coursework is designed to assist the student's discovery of ceramic form and content as applied to personal artistic expression. Emphasis upon the development of creative studio research techniques and seminar-type experiences exploring historical and contemporary issues as they relate to ceramic art. Special approval needed from the adviser. Studio fee: \$55 per credit hour enrolled. Incidental expenses may exceed \$50.

AD505 - Advanced Metals II 505-3 to 21 Advanced Metalsmithing II. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Special approval needed from the adviser. Studio fee: \$20 per credit hour enrolled.

AD507 - Readings in Art History 507-3 to 6 (3,3) Readings in Art History and Visual Culture. Independent study on topics in the history of art and visual culture developed in consultation with art history faculty. Typical projects include directed readings and research projects. Requires permission of the instructor.

AD510 - Integrated Design Practice 510-3 Integrated Design Practice. This course prepares students with design research theory and methodology to tackle critical social issues of our times. It will introduce basic methods in design research and methodology, both in qualitative and quantitative methods. It also serves as a platform for scholarly inquiry into design in the disciplines of graphic design, industrial/product design, advertising/art direction, fashion design, and interior architecture and in other aesthetic, spatial and technological practices. Students develop conceptual skills, aesthetic awareness, and technical mastery in individual and collaborative studio projects.

AD514 - Glass II 514-3 to 21 Advanced Glass II. An advanced glass course intended to increase the student's knowledge of the potential of glass as a medium of creative expression and to refine studio skills associated with the material. Coursework will include the investigation of historical and contemporary solutions to aesthetic problems related to the medium. Special approval needed from the adviser. Studio fee: \$80 per credit hour enrolled.

AD517 - Art/Visual Culture Methods 517-3 Methods and Theory of the History of Art and Visual Culture. This course introduces graduate students to the history of the disciplines of art history and visual culture, examining the assumptions and methods that have guided definitions, analyses, and critiques of art and visual culture. This course is required of students in the MA program in art history and visual culture.

AD521 - Advanced Design II 521-3 Advanced Design II. Multifaceted problems with emphasis on continuity of design in more than one medium or format. Advanced multifaceted problems incorporating design briefs and/or professional proposals intended to increase a student's knowledge of the theory and practice of branding, identity systems and design process and methodologies. Coursework will include the

development of a body of work including research with outcome solutions based on individual or client-based requirements.

AD530 - Advanced Digital Design I 530-3 Advanced Digital Design I. Advanced design course intended to increase a student's knowledge of the theory and practical knowledge of digital design technologies and digital design problems. Coursework will include documentation of design process, user research, and exploration of concepts and topics related to interaction design, interactive design, and time-based graphic design.

AD531 - Advanced Digital Design II 531-3 Advanced Digital Design II. A computer laboratory course focused on advanced utilization of two- and three-dimensional design processes, drawing and modeling software, and the application of such in the design profession. Course content covers advanced modeling techniques, surface modeling, power surface subdivision surface modeling, NURBS modeling, generative design, design for manufacturing assembly, disassembly and rapid prototyping, product planning, simulation, graphics and renderings, creation of tables used with assembly drawings and bill of materials.

AD537 - Art Hist Teaching Practicum 537-3 Teaching Practicum in Art History. Introduces students to pedagogical methods relevant to teaching art history. Students enrolled in the practicum will serve under the close supervision of the art history faculty as discussion leaders for one section of AD 101 or the AD 207 sequence. Practicum students will attend the AD 207 lectures and participate in a weekly teaching workshop, which will address topics such as the development of course syllabi and assignments, grading criteria, classroom policies, and teaching strategies. Prerequisite: Art History Certificate program and/or special approval from the instructor required.

AD572A - Advanced Design I 572A-3 to 6 Advanced Design I. Problems in promotional design applications including campaigns, packaging and advertising graphics. Emphasis is placed on professional realities, problem solving, and further development of creative design abilities. Multifaceted problems that incorporate design briefs and professional proposals with outcome solutions to include written research documentation and finished concept creation.

AD572B - Advanced Design I 572B-3 to 6 Advanced Design I. Problems in physical game applications including game ideation methods, game construction, playtesting, packaging, sales and promotional campaigns, and advertising graphics. Emphasis is on professional realities, problem solving, and further development of creative design abilities. Multifaceted problems that incorporate design briefs and professional proposals with outcome solutions to include written research documentation and finished concept creation.

AD583 - Practicum in Industrial Design 583-3 Practicum in Industrial Design. Advanced and comprehensive product design projects focusing on innovation and user needs. Projects may include corporate sponsors and/or interdisciplinary teams. Students will integrate research and 2D and 3D process documentation with additional focus on human factors and product interface. Undergraduates: Course parallels work in AD 363 and must be taken concurrently. Prerequisites: C or better in AD 313 and AD 323. Concurrent enrollment in AD 363. Graduates: Prepare and present a paper on a specific innovation, user needs, interdisciplinary teams, or collaboration topic of their choosing. Graduate students will serve as design directors for the client-based projects conducted by the undergraduate students in the class. Studio Fee: \$60.

AD596 - Qualifying Exam 596-3 Exam in Art History and Visual Culture. A comprehensive exam on the history, methods, and theory of the history of art and visual culture. Special written approval needed from the primary and secondary advisers.

AD597A - Sem Art Hist-Medieval Art 597A-3 to 12 (3 per topic) Graduate Seminar in Art History-Medieval Art. A close examination of the history of art and visual culture from various periods and regions. Topics will vary, and include (A) Medieval Art. Each section may be repeated for credit as topics vary.

AD597B - Sem Art Hist-Early Modern Art 597B-3 to 12 (3 per topic) Graduate Seminar in Art History-Early Modern Art. A close examination of the history of art and visual culture from various periods and regions. Topics will vary, and include (B) Early Modern Art. Each section may be repeated for credit as topics vary.

AD597C - Sem in Art Hist-Modern Art 597C-3 to 12 (3 per topic) Graduate Seminar in Art History-Modern and Contemporary Art. A close examination of the history of art and visual culture from various periods and regions. Topics will vary, and include (C) Modern and Contemporary Art. Each section may be repeated for credit as topics vary.

AD597D - Sem in Art History-Selected 597D-3 to 12 (3 per topic) Graduate Seminar in Art History-Selected Topics. A close examination of the history of art and visual culture from various periods and regions. Topics will vary, and include (D) Selected Topics. Each section may be repeated for credit as topics vary.

AD599 - Thesis 599-3 to 6 Thesis. A thesis course that is directed toward individual research in the student's major field. Emphasis is placed upon the development of each student's approach to his/her professional practice within the context of the appropriate studio, art history/visual culture, or design field requirement set.

AD601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Art and Design Faculty

Abdul-Musawwir, Najjar, Associate Professor, M.F.A., Southern Illinois University Carbondale, 1997.
Abrahamson, Roy E., Associate Professor, Emeritus, Ed.D., Columbia University, 1965.
Addington, Aldon M., Associate Professor, Emeritus, M.F.A., Cranbrook Academy of Art, 1966.
Archer, Richard E., Assistant Professor, Emeritus, M.S., Governors State University, 1979.
Belletire, Steven P., Professor, BFA, University of Illinois, 1971.
Bernstein, Lawrence A., Associate Professor, Emeritus, M.F.A., Cranbrook Academy of Art, 1953.
Bickel, Barbara A., Associate Professor, Ph.D., The University of British Columbia, 2008.
Boysen, Bill H., Professor, Emeritus, M.F.A., University of Wisconsin, 1966.
Briggs, Larry S., Associate Professor, Emeritus, B.F.A., University of Oklahoma, 1956.
Bukowski, Marie, Professor and Director, M.F.A., University of Pennsylvania, 2000.
Busch, W. Larry, Associate Professor, Emeritus, M.S., Southern Illinois University, 1970.
Chalmers, Patricia, Associate Professor, M.F.A., University of Minnesota, 2001.
Deller, Harris, Professor, Emeritus, M.F.A., Cranbrook Academy of Art, 1973.
Feldman, Joel B., Professor, Emeritus, M.F.A., Indiana University, 1967.
Gradle, Sally A., Associate Professor, Ed.D., University of Illinois, Urbana-Champaign, 2004.
Greenfield, Sylvia R., Professor, Emerita, M.F.A., University of Colorado, 1967.
Kim, Sun Kyoung, Assistant Professor, M.F.A., University of Illinois, Urbana-Champaign, 2008.
Lee, Jiyong, Associate Professor, M.F.A., Rochester Institute of Technology, 2001.
Lintault, M. Joan, Professor, Emerita, M.F.A., Southern Illinois University, 1962.
Lopez, Alex, Associate Professor, M.F.A., Alfred University, 1998.
Lopez, Robert A., Assistant Professor, M.F.A., University of Illinois, Urbana-Champaign, 2000.
Mavigliano, George J., Associate Professor, Emeritus, M.A., Northern Illinois University, 1967.
Mawdsley, Richard, Professor, Emeritus, M.F.A., University of Kansas, 1969.
Monteith, Jerry Carlis, Professor, M.F.A., Cranbrook Academy of Art, 1978.
Onken, Michael O., Associate Professor, Emeritus, M.A., Northern Illinois University, 1966.
Palmer, Erin, Associate Professor, M.F.A., Yale University, 1993.
Paulson, Robert L., Professor, Emeritus, M.F.A., University of Wisconsin, 1967.
Pease, Mark, Assistant Professor, M.F.A., University of Pennsylvania, 2003.
Scott, Aaron, Assistant Professor, M.F.A., Purdue University, 2008.
Shang, Xuhong, Professor, M.F.A., Temple University, 1992.
Shay, Edward Holden, Professor, Emeritus, M.F.A., University of Illinois, 1971.
Sloboda, Stacey, Associate Professor, Ph.D., University of Southern California, 2004.
Smith, Richard E., Professor, M.F.A., Southern Illinois University Carbondale, 1992.
Sullivan, James E., Associate Professor, Emeritus, M.A., University of California at Los Angeles, 1965.
Sullivan, Milton F., Professor, Emeritus, M.A., Columbia University, 1951.

Walsh, Thomas J., Professor, Emeritus, M.F.A., University of Michigan, 1962.
Youngblood, Michael S., Associate Professor, Emeritus, Ph.D., University of Oregon, 1975.
Zivkovich, Kay M., Professor and Assistant Director, M.F.A., Southern Illinois University Carbondale, 1973.

Automotive Technology

The Automotive Technology program in the College of Applied Sciences and Arts provides students with an opportunity to obtain a solid foundation of knowledge, experience and skills that will assist in job entry and career advancement in the automotive industry.

Current automotive trends indicate that the automobile will continue to experience changes that include expanded use of electronics and computerized controls for improving engine performance, fuel efficiency, on-board diagnostics, exhaust emissions, and passenger comfort and safety. These changes will require persons knowledgeable and highly skilled in specialized areas of automotive technology. This program offers the student an opportunity to specialize in chosen automotive subject areas and offers the opportunity to develop technical, communication and supervisory skills. The student should expect to spend about \$1,500 for a required basic tool kit consisting of metric tools and a digital multimeter.

The Automotive Technology program has achieved master certification by the National Institute for Automotive Service Excellence (ASE). Instruction is offered in all eight areas of ASE certification—engine repair, automatic transmissions/transaxles, manual drive trains and axles, suspension and steering, brakes, electrical/electronic systems, heating and air conditioning, and engine performance. Students are encouraged to complete the certification process by taking the ASE certification exams.

An advisory committee composed of leaders in the automotive field provides additional guidance to the program. Current members include representatives from General Motors Company, Ford Motor Company, Fiat Chrysler Automobiles, Toyota Motor Sales, U.S.A., Inc., Nissan Motor Corporation, Mitsubishi Motors North America, Inc., Cummins, Inc., American Honda Motor Co., Inc., NAPA, training providers, vocational directors, automotive dealerships, and wholesale/retail outlets.

Bachelor of Science Degree

The Bachelor of Science Degree in Automotive Technology is designed to provide an educational environment for students to acquire the professional, research, and technical skills necessary for success in the automotive and related industries. The degree provides theoretical and practical hands-on application of knowledge through a combination of automotive technical courses and automotive business/management courses, along with computing and communication courses. The flexibility of the curriculum accommodates the needs of both incoming freshmen and transfer students. Students have the option of focusing on multiple areas of emphasis, earning a minor, and possibly earning dual degrees. Students can adjust their focus in areas such as: automotive technical, automotive business operations, automotive management, automotive technical education, marketing, and management.

The program can strengthen previous automotive training and the Capstone Option is available to qualified A.A.S. graduates entering the Automotive Technology bachelor's degree program as explained in this catalog.

Automotive and truck manufacturers, component manufacturers and suppliers, government agencies, insurance organizations, educational institutions, training and curriculum organizations, and service providers are seeking four-year automotive technology graduates. The number of job titles in the area of automotive technology reflects the nature of a diverse and expanding field. Job titles include field service engineer, technical assistance specialist, serviceability engineer, district parts/service manager, customer support manager, automotive instructor, account manager, fleet manager, service advisor, dealership service manager, technical training specialist, district sales manager, field executive, technical writer, and product engineer. These positions require a four-year degree with skills in communications, management and consumer relations as well as technical knowledge.

Admission to Automotive Technology

Those interested in applying to the Automotive Technology program are encouraged to begin the application process approximately one year in advance. Admission requirements to the applicant pool are the same as those to the University. After acceptance to the University and indicating Automotive Technology as the primary intended major, students are placed into the Automotive Technology Applicant Pool. No separate application is needed. Additional review of applicants will occur on predetermined dates for possible acceptance into the Automotive Technology major. The review criteria and dates are available from the Department and are on the Department's website: automotive.siu.edu.

The Automotive Technology Program welcomes students with AAS degrees in Automotive Technology from regionally accredited colleges. These students may qualify for the Capstone Option (see Capstone section) which reduces the overall Core Curriculum requirements necessary for the bachelor's degree. If you have questions about what classes are needed to qualify for the Capstone Option, contact your community college advisor and the Automotive Technology program.

Internship Programs

Automotive Technology majors can participate in paid internship experiences and may be able to earn credit toward graduation. Opportunities occur during all semesters (including the summer term), with some programs available for two sequential terms. Internship sites are situated in various locations throughout the United States. Internship opportunities may be available with Fiat Chrysler Automobiles, Cummins Inc., Toyota Motor Sales, U.S.A., Inc., Eaton Corporation, General Motors Company, Robert Bosch Corporation, Ford Motor Company, Sherwin-Williams Automotive Finishes, Motors Insurance Corporation, General Services Administration (GSA) of the Federal Government, and other various automotive businesses.

Bachelor of Science Degree in Automotive Technology, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
University Core Curriculum ¹	41
Requirements for Major in Automotive Technology	79
Category II: Automotive Technology 100 and 200 level courses: (or Approved Substitutions) Select from: AUT 120, AUT 150, AUT 170, AUT 180, AUT 215, AUT 216, AUT 240, AUT 250 and AUT 280	36
Category III: Automotive Technology 300 and 400 technical courses: (or Approved Substitutions) Select from: AUT 330, AUT 340, AUT 355, AUT 360, AUT 370, AUT 390, AUT 440, AUT 445, AUT 450, AUT 480, AUT 490 ²	15
Category IV: Business/Management Courses (or Approved Substitutions)	15
Group I: Select one course from the following: AUT 310, TRM 316	
Group II: Select one course from the following: AUT 335	

Degree Requirements	Credit Hours
Group III: Select one course from the following: AUT 325, MGMT 304, MGMT 350, TRM 364	
Group IV: Select two courses from the following: AUT 345, AUT 435, AUT 485, ACCT 210, FIN 208, FIN 270, FN 280, MKTG 304, MKTG 305, MKTG 350, PSYC 323, TRM 361, TRM 362, TRM 383	
Category V: Support Courses selected from the following:	13
Any Category III course not previously taken. Any Category IV Group III or Group IV course not previously taken. Credit from AUT 320, AUT 420, AUT 430, AUT 475, MGMT 318, MGMT 341, MKTG 329, MKTG 336, MKTG 401, TRM 361, TRM 362, WED 460, WED 462, WED 463 Or Department approved substitutions	
Total ³	120

1 Capstone= 30; UCC= 41.

2 Consent of department.

3 Note: Credit from all areas must total a minimum of 42 hours of 300- and 400-level courses. Degree requires a total of 120 credit hours.

Automotive Technology Courses

AUT100 - Automotive Lab Practices 100-3 Automotive Laboratory Practices. Course covers universal automotive shop practices including safety, tool usage, fasteners, sealants and measurement devices. Lecture topics cover safety and environmental concerns, service information retrieval, and correct application of sealants and fasteners. Laboratory activities include thread repair, automotive measurements, electrical repair, and cutting/grinding equipment usage. Restricted to major. Fee: \$36.

AUT120 - Auto Electrical Principles 120-3 Automotive Electrical Principles. A course of study in the design and theory of automotive electrical circuits. Particular emphasis placed on the study of how electricity behaves in series and parallel DC circuits, general application of these theories to automotive electrical systems, and the proper use of typical electronic and electrical circuit diagnostic equipment. Also emphasizes the understanding of automotive wiring diagrams, and relay and solenoid operation. Restricted to major. Lab fee: \$45.

AUT150 - Int Combust Engine Principles 150-6 Internal Combustion Engine Principles. Course combines the study of engine operational theory with practical technical skills. Content emphasizes the 720 degree power cycle and the dynamics of engine operation, design and efficiency (thermal, mechanical & volumetric). Laboratory experience consists of engine disassembly, component design study, inspection and measurement of components and engine assembly techniques. Restricted to major. Fee: \$90.

AUT170 - Auto Powertrain Electronics 170-6 Automotive Powertrain Electronics. Course includes design and operation of solid state devices, wiring, batteries, starting and charging systems, and basic powertrain control systems. Lectures emphasize the operation of these systems and their individual components. Emphasis placed on system diagnosis. Laboratories allow the study of digital multimeters, battery/starting/charging system test equipment and scan tools. Restricted to major. Lab fee: \$120.

AUT180 - Manual Drivetrains 180-3 Manual Drivetrains. A detailed study of automotive manual transmission and transaxle assemblies, clutch assemblies, drive axles, and four-wheel drive transfer cases, including an introduction to noise, vibration, and harshness (NVH) diagnostics. Lectures focus on the basic theory of operation and diagnostics of the automotive drivetrain. Laboratory experience provides the opportunity to study approved inspection, maintenance, and diagnostic procedures. Restricted to major. Lab fee: \$60.

AUT215 - Automotive Braking Systems 215-3 Automotive Braking Systems. Course covers brake system design, operation and diagnosis. Lectures describe brake system component interrelationships and an introduction to ABS. Special emphasis placed on component diagnosis and maintenance procedures. Laboratory experience provides students the opportunity to use specialized tools, such as on-the-car lathes, brake bleeding equipment, and brake system diagnostic equipment. Restricted to major. Special approval needed from the advisor. Lab fee: \$105.

AUT216 - Suspension & Steering Systems 216-3 Automotive Suspension and Steering Systems. Course covers suspension and steering system design, operation, maintenance and diagnosis. Emphasis is placed on component diagnosis and maintenance procedures. Laboratory experience provides students the opportunity to use computerized alignment, wheel balance and vibration correction equipment. Restricted to major. Special approval needed from the advisor. Lab fee: \$105.

AUT240 - Intro to Engine Controls 240-6 Introduction to Engine Controls. A study of automotive engine electronics. Lectures focus on engine control circuits, fuel injection and ignition systems with emphasis on operation, application and diagnosis. Discussion topics include operational strategies, fuel delivery, sensor inputs and actuator outputs. Laboratory includes the use of electronic diagnostic tools for engine performance diagnosis. Prerequisite: AUT 150 & AUT 170 or consent of the department. Restricted to major. Special approval needed from the advisor. Lab fee: \$150.

AUT250 - On Board Diag & Emissions 250-3 On Board Diagnostics and Emissions. The specialized study of automotive fuels, electronic fuel injection systems, and related emission control systems. Lectures focus on the operational and diagnosis of electronic fuel injection systems and emission control systems. Laboratory experience provides the opportunity to study the use of electronic diagnostic tools, specialized equipment, and diagnostic systems. Prerequisites: AUT 150 and AUT 170 or consent of department. Restricted to major. Special approval needed from the advisor. Lab fee: \$75.

AUT258 - Auto Work Experience 258-1 to 30 Automotive Work Experience. A designation for credit granted for past documented automotive job skills, management-worker relations and supervisory practice gained through experiences related to the student's academic and career objectives. Credit will be established by departmental evaluation. This credit may be applied only to 100 and 200 level automotive technical courses as determined by the department coordinator. Restricted to automotive technology major.

AUT259 - Automotive Occupation Training 259-1 to 40 Automotive Occupational Training. A designation for credit granted for past documented automotive educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation. This credit may be applied only to 100 and 200 level automotive technical courses as determined by the department coordinator. Restricted to automotive technology major.

AUT280 - Auto Air Cond Systems 280-3 Automotive Air Conditioning Systems. A study of refrigeration systems, temperature controls, and automotive HVAC vacuum/electrical circuits. Emphasis placed on environmental impact of refrigerants, environmentally safe refrigerant technology and applicable legislation. Laboratory experiences provide the opportunity to study the use of air conditioning system diagnostic tools, refrigerant recovery/recycling equipment, and diagnostic and repair services. Prerequisite: AUT 170. Restricted to major. Special approval needed from the advisor. Lab fee: \$75.

AUT299 - Individual Study 299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of study to fit a particular need not met by other offerings. Each student will work under the supervision of a sponsoring faculty. Special approval needed from the department.

AUT301 - Automotive Ethics 301-3 Automotive and Mobility Industry Ethics. This course introduces students to the principles of ethics and proper conduct in the professional academic environment. Considerable time is spent researching and analyzing ethics case studies/dilemmas pertaining to the

automotive industry, within an ethical decision-making framework. Oral presentations are based on case studies and are peer-evaluated using specific assessment criteria. Intellectual honesty is practiced through ethical documentation, and citation. Prerequisite: none. Restricted to Automotive Technology students or departmental approval required.

AUT310 - Auto Tech Communications 310-3 Automotive Technical Communications and Documentation. This course engages students in the study of technical communications and documentation skills used by managers and technical experts in the automotive industry. Foundations of technical communication and documentation are followed by the application of automotive industry specific examples. Emphasis will be placed on critical thinking, documentation and communication in the appropriate industry context. Prerequisite: ENGL 101 and CMST 101, or consent of department. Restricted to major. Special approval needed from the advisor.

AUT320 - Automotive Internship 320-1 to 6 Automotive Internship. Students will participate in a program approved automotive related internship that includes formal instruction, training and/or career related work experiences. Students receive a salary or wages and engage in prearranged assignments related to their academic program and career objectives. Program faculty evaluations, supervisor performance evaluations, and student reports are required. Internship experiences may be in one of the following areas: automotive service technical, engineering, parts, business, management, training, or government agencies. Hours and credits to be individually arranged. Students can take a maximum of 15 hours toward degree. Restricted to major. Special approval needed from the advisor.

AUT325 - Auto Fixed Operations Mgt 325-3 Automotive Fixed Operations Management. An introduction to management of automotive retail fixed operations. A study of the automotive retail industry and environment, developing concepts and methods to improve customer satisfaction along with an increase in market penetration, profits and efficiency are emphasized. Planning of workflow control and human resource management will be included. This course is writing intensive and reflects the College's Communication-Across-the-Curriculum initiative. Prerequisite: ENGL 101. Restricted to major. Special approval needed from the advisor.

AUT330 - Vehicle Stability & NVH 330-3 Vehicle Stability and NVH. Suspension and braking control systems that provide additional safety to vehicle operation. Topics covered include antilock brakes, traction control, electronic stability assist, electronic power steering, variable power steering, active suspensions, and tire pressure monitoring. Course includes techniques in diagnosing noise, vibration and harshness (NVH) concerns. Restricted to major. Special approval needed from the advisor. Lab fee: \$90.

AUT335 - Auto Data Systems 335-3 Automotive Data Systems. Course introduces software and hardware tools used in the automotive industry through project-based learning exercises relevant to automotive technology applications. Topics include automotive information systems, automotive diagnostic systems, and an introduction to microcontrollers. Lab fee: \$15.

AUT340 - Drivability & Emission Diagnst 340-6 Drivability and Emission Diagnostics. An in-depth study of electronic engine controls and emission systems. Lectures focus on fuel analysis, advanced diagnostics, legislative regulations and new technologies related to engine controls and emission systems. Laboratory activities include the use of advanced diagnostic tools such as oscilloscopes, scan tools, exhaust gas analyzers, and chassis dynamometer. Restricted to major. Special approval needed from the advisor. Lab fee: \$180.

AUT345 - Adv Auto Data Systems 345-3 Advanced Automotive Data Systems. Course is an in-depth study of the tools and methods used in the acquisition, analysis, warehousing, and dissemination of automotive data. Emphasis is on advanced spreadsheet and database techniques used in decision-making processes. Other topics include an introduction to automotive data communication technologies and data networks. Prerequisite: AUT 335 or consent of department. Restricted to major. Lab fee: \$15.

AUT350 - Parts Center Management 350-3 Automotive Parts Center Management. Course provides insight into automotive dealership parts management with emphasis on application to daily work. Studies will focus on interpretations stocking benchmarks and on business management techniques essential to successful dealership parts operations. Prerequisite: none. Restricted to Automotive Technology students or departmental approval required.

AUT355 - Convenience & Safety Sys 355-6 Lighting, Convenience, and Safety Systems. Course covers theory of operation and diagnosis of standard body electrical systems. Topics include power windows, power door locks, power seats, lighting, instrumentation, cruise control, and supplemental restraints. Emphasis is placed on analysis of electrical diagrams and development of diagnostic techniques. Laboratory provides the opportunity to practice troubleshooting skills. Restricted to major. Special approval needed from the advisor. Lab fee: \$150.

AUT358 - Auto Mgt Work Experience 358-1 to 30 Automotive Management Work Experience. A designation for credit granted for past documented automotive management work experiences related to the student's educational objectives. Credit will be established by departmental evaluation. This credit may be applied only to automotive technical, business/management, or support courses requirement of the automotive technology degree as determined by the department chair. Restricted to major. Special approval needed from the advisor.

AUT359 - Auto Education Credit 359-1 to 60 Automotive Education Credit. A designation for credit granted for past documented automotive educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation. This credit may be applied only to automotive technical, business/management, or support courses requirement of the automotive technology degree as determined by the department chair. Restricted to major. Special approval needed from the advisor.

AUT360 - Auto Transmission & Transaxle 360-6 Automotive Transmissions and Transaxles. Course covers the theory of operation, diagnosis, and repair of modern transmissions. The course will break down the transmission into basic components and provide the depth required for complete understanding of the specific transmission. The laboratory will allow students to understand correct service procedures, and test the transmission on a dynamometer. Restricted to major. Special approval needed from the advisor. Lab fee: \$150.

AUT370 - Auto Welding and Fabrication 370-3 Automotive Introductory Welding and Fabrication. Course covers introductory topics of metal cutting, welding and shaping applicable to the automotive industry practice. Lectures focus on setup, operation and maintenance of equipment such as oxygen-acetylene systems as well as Stick, MIG, and TIG welders. Laboratory activities include the use of equipment to develop and improve skills. Not for graduate credit. Restricted to major. Special approval needed from the advisor. Lab fee: \$120.

AUT380 - Auto Process Improvement 380-3 Automotive Industry Process Improvement. A study into several of the automotive wholesale and retail industry approaches to system processes for service production, component production, quality control, and regulatory control. Topics will include organizational systems utilized, application of the systems, and the theories to controlling and improving of the systems to ensuring project success. These areas are critical to the assembly, sales and service segments of the automobile industry. Prerequisite: none. Restricted to Junior/Senior standing. Restricted to Automotive Technology students or departmental approval required.

AUT390 - Network Sys & Vehi Electronics 390-3 Network Systems and Vehicle Electronics. A study of specialized body electrical systems. Topics include data communication networks, theft deterrent systems, automatic temperature controls, and audio systems. Emphasis is placed on current and developing technologies. Laboratory experiences provide the opportunity to use scan tools, oscilloscopes, and on-board self-diagnostic systems. Restricted to major. Special approval needed from the advisor. Lab fee: \$60.

AUT420 - Auto Service Operations Intern 420-1 to 12 Automotive Service Operations Internship. Each student will be assigned to a University approved work site to engage in work experience related to the Automotive Technology curriculum and the student's career objectives. The student will perform duties and services as assigned by the work site supervisor and internship coordinator. A written assignment is also required as determined by the program. One hundred hours of successfully completed work is required for each semester hour of credit. Not for graduate credit. Restricted to senior standing, major. Special approval needed from the advisor.

AUT430 - Automotive Investigations 430-1 to 6 Automotive Investigations. Provides opportunities for students to conduct research in such areas as: green vehicle technology, emissions and clean air testing; diagnostic software debugging; diagnostic methods; development of training information; alternative fuel

systems; business operations; management/marketing practices; and production systems. Independent study. Student can take a maximum of 15 hours toward degree. Restricted to major. Special approval needed from the advisor.

AUT435 - Auto Financial Mgt & Operation 435-3 Automotive Financial Management and Operations. This course will provide insight into the applied analysis and management of automotive retail dealership financial operations. Studies will focus on fixed and variable operations with emphasis on manufacturer/dealer performance expectations, and management techniques essential to successful operations. Not for graduate credit. Special approval needed from the advisor.

AUT440 - Diesel Perform & Emissions 440-6 Diesel Engine Performance and Emissions. An in-depth study of electronic diesel engine controls and emission systems. Lectures focus on electronic fuel and intake air system controls, advanced diagnostics, legislative regulations and new technologies related to diesel engine controls and emission systems. Laboratory activities include the use of advanced diagnostic tools and equipment. Restricted to major. Special approval needed from the advisor. Fee: \$180.

AUT445 - Med/Heavy Duty Vehicle Sys 445-3 Medium/Heavy Duty Commercial Vehicle Systems. Course encompasses commercial vehicle chassis and body systems related to medium and heavy duty on-road vehicles. Students engage in body/chassis system failures, diagnostic strategies and root causal issues. Class is based on Symptom to System to Component to Cause (SSCC) strategy to determine failure and repair procedures. Course utilizes problem-based learning through the use of lab vehicles, experiments and exploratory research. Not for graduate credit. Restricted to major. Special approval needed from the advisor. Lab fee: \$120.

AUT450 - Hybrid & Elec Veh Tech 450-3 Hybrid and Electric Vehicle Technology. This course introduces and investigates hybrid electric and electric vehicle technologies through lecture and laboratory demonstrations. Emphasis will be placed on developing an understanding of the functions of hybrid/electric components and subsystems, the diagnosis and maintenance of electrical subsystems, and high-voltage/high current safety practices. Prerequisite: AUT 250 or consent of department. Special approval needed from the advisor. Fee: \$120.

AUT460 - Auto Corporate Leadership 460-3 Automotive and Mobility Corporate Leadership. This course will take an in-depth look at leadership within the automotive and mobility corporate industry to identify the skills, traits, and habits that set leaders apart. Students gain an understanding of the fluid industry landscape and characteristics of successful leadership. Students will study and apply techniques in developing their personal leadership skillsets. Not for graduate credit. Prerequisite: None. Restricted to Junior/Senior standing. Restricted to Automotive Technology students or departmental approval required.

AUT470 - Autonomous Technology 470-3 Autonomous and Intelligent Mobility System Technology. This course investigates technologies used for vehicular and mobility system autonomous and intelligent controls. Topics include autonomous and intelligent systems, system controls, system intelligence, adaptation, diagnostics, and serviceability design. Not for graduate credit. Prerequisite: AUT 335, and AUT 340 or AUT 440. Restricted to Automotive Technology students or departmental approval required. Lab fee: \$120.

AUT475 - Special Projects in Auto 475-1 to 6 Special Projects in Automotive Technology. Investigation of contemporary issues within the automotive, ground transportation and power generation fields. Example subjects include emission laws and regulations; passenger and pedestrian safety; inspection, maintenance, diagnostic, and servicing procedures; consumer protection legislation; diagnostic systems; waste material regulations; industry wholesale and retail business operations and procedures. Independent study. Student can take a maximum of 15 hours toward degree. Restricted to major. Special approval needed from the advisor.

AUT480 - Alternative Fueled Vehicles 480-3 Alternative Fueled Vehicles. Study of alternative fuel and energy systems, fuel delivery systems, alternative propulsion systems, hybrid and alternative propulsion. Study of energy conversion, battery design, fuel cells, renewable and fossil fuel. Environmental concerns with current legislative actions will be discussed. Laboratory includes demonstrations with alternative fueled propulsion. Not for graduate credit. Restricted to major. Special approval needed from the advisor. Lab fee: \$60.

AUT485 - Warranty Admin & Cust Relation 485-3 Automotive Warranty Administration and Customer Relations. This course investigates the various federal and state laws and regulations impacting the operations of the automotive wholesale and retail business. There will be specific concentration on the warranty policies of automotive manufacturers, warranty decisions, law covering warranties, and the legal aspects of product campaigns. Emphasis will be placed on the use of the warranty and goodwill process to increase customer satisfaction. Not for graduate credit. Restricted to major. Special approval needed from the advisor.

AUT490 - Comp Vehicle Diagnostics 490-6 Comprehensive Vehicle Diagnostics. Course encompasses all technical areas of the vehicle with emphasis on diagnostic strategies and routines. Students engage in systematic diagnosis following the Symptom to System to Component to Cause (SSCC) strategy to determine the root cause of failure. Course utilizes problem-based learning through use of lab vehicles, experiments and exploratory research. Not for graduate credit. Prerequisites: AUT 335, AUT 340 or 440, or consent of department. Restricted to major. Special approval needed from the advisor. Lab fee: \$180.

Automotive Technology Faculty

Behrmann, Michael, Associate Professor and Chair, M.S.Ed., Southern Illinois University Carbondale, 1995.

Boyle, Sean M., Associate Professor, M.S.Ed., Southern Illinois University Carbondale, 1996.

Collard, Rodney, Associate Professor, M.S.Ed., Southern Illinois University Carbondale, 1990.

Croxell, Andrew, Assistant Professor, M.S.Ed., Southern Illinois University Carbondale, 2010.

Gilbert, David W., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2006.

Grant, Todd, Assistant Instructor, B.S., Southern Illinois University Carbondale, 1987.

Greer, Jack, Assistant Professor, Emeritus, M.S.Ed., Southern Illinois University Carbondale, 1997.

Heathcoat, Anthony, Assistant Instructor, B.S., Southern Illinois University Carbondale, 2016.

Heisner, Blaine, Assistant Professor, M.S.Ed., Southern Illinois University, 2010.

Janello, Tim, Associate Professor, M.S.Ed., Southern Illinois University Carbondale, 2008.

Jerald, Lawrence E., Assistant Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1988.

Kazda, Joseph G., Assistant Professor, Emeritus, M.S.Ed., Southern Illinois University Carbondale, 1965.

Komnick, Benjamin, Assistant Professor, M.S.Ed., Southern Illinois University Carbondale, 2004.

Meckfessel, Kent E., Assistant Instructor, B.S., Southern Illinois University Carbondale, 1996.

Pickerill, Ken, Assistant Instructor, M.S.Ed., Indiana State University, 2008.

Rizzo, Lana, Assistant Instructor, B.S., Southern Illinois University Carbondale, 1988.

Simpson, Jerry, Assistant Professor, Emeritus, M.S., Colorado State University, 1966.

Sing-Gupta, Vidya, Instructor, Ph.D., Southern Illinois University Carbondale, 1988.

Suda, Jessica L., Assistant Instructor, B.S., Southern Illinois University Carbondale, 2011, 2014.

Talley, Eugene R., Assistant Professor, M.B.A., Baker College, 2008.

Tate, Ralph F., Associate Professor, M.S., Air Force Institute of Technology, 1991.

White, James E., Assistant Professor, Emeritus, B.S.Ed., Southern Illinois University Carbondale, 1961.

Aviation Flight

The Aviation Flight program is designed to prepare beginning students for the Federal Aviation Administration Commercial Pilot Certificate including the multi-engine and instrument ratings. Instruction is conducted at Southern Illinois Airport, Carbondale, Illinois. Flight theory courses will supplement and complement each flight course. In order to maintain the highest possible standards for flight and theory courses, each lesson of every course is submitted to and approved by the Federal Aviation Administration. FAA designated check pilots will examine the student's performance and effectiveness periodically during each flight course. University Core Curriculum Requirements and basic science courses will be supplemented with a required core of flight courses and other related technical courses to enhance the student's professional value to the aviation industry. A grade of C or better is required for all Aviation Flight (AF) courses to satisfy the requirements for a major in Aviation Flight. In addition to the

University tuition and fees, substantial lab fees are assessed for each flight course. For current charges, contact the Aviation Flight program.

The Associate in Applied Science degree can be completed in two academic years plus one summer semester at Southern Illinois University Carbondale or in combination with community college or other acceptable extra-instructional educational experience; however, the twenty-one semester hours of aviation flight courses must be taken at SIU. If a Private Pilot certificate is earned prior to enrollment at SIU, students will be required to take AF 199. Upon successful completion of AF 199, credit will be given for AF 201A and 201B. Contact the Aviation Flight program at 618/453-1147 for further information.

The aviation flight degree program requires the submission of a program application in addition to the University admission application. One cannot be fully admitted to the SIUC Aviation Flight Program until the response to the second application is received. All applicants must satisfy University baccalaureate entrance requirements in order to be admitted to the University and to the Aviation Flight applicant pool. Enrollment in Aviation Flight will be based on selective criteria. It is recommended that the program application be completed and returned to the Aviation Flight Program by December 1 of the year prior to desired Fall enrollment in the program or four months prior to desired Spring or Summer term entry.

After completing the Aviation Flight program the majority of graduates proceed on to a Bachelor of Science in Aviation Management (AVM) degree program on a "Two-Plus-Two" basis. In conjunction with enrollment in the Aviation Management program, Aviation Flight graduates are eligible for a wide range of flight operations internships at such airlines as United, Delta, American, and Cape Air. Also available is a flight internship experience via the SIU Aviation Flight program as a flight instructor. Finally, Aviation Flight 220 "Practicum in Air Carrier Operations" offers post-associate course work and flight experience as a pilot in command of the University's twin-engine aircraft.

Aviation Flight has a Random Student Drug Testing Program. For details refer to the departmental website at aviation.siu.edu/flight/safety.

Associate in Applied Science Degree in Aviation Flight, College of Applied Sciences and Arts

Aviation Flight Major

Degree Requirements	Credit Hours
University Core Curriculum	15
ENGL 101, ENGL 102, CMST 101, University Core Group I Science and MATH 108 or 125 or Advanced University Core Math	
Requirements for the Major in Aviation Flight Core Requirements	45
Aviation Flight Courses: AF 201A,B, AF 203, AF 204, AF 206A,B, AF 207A,B	24
Aviation Flight Technical Courses: AF 101, AF 200, AF 202, AF 205, AF 210, AF 211, AF 260	21
Total	60

All Aviation Flight courses are restricted to AF majors.

Aviation Flight Courses

AF101 - Foundations of Inquiry: AVM/AF 101-1 Foundations of Inquiry: Aviation Management and Flight. This First-Year Seminar supports the transition of first-year students as they enter our research university. Students will demonstrate the knowledge, skills, and behaviors critical for academic and personal success; acquiring these capabilities as they are introduced to the foundations of inquiry.

AF199 - Intermed Flt/Prog Transition 199-2 Intermediate Flight/Program Transition. This course is for the first time entry-level student certificated as a Private Pilot who was certified and trained outside SIUC. It provides orientation training in the areas of SIUC flight procedures and standards, SIUC flight training aircraft, local airspace and airport environments. The course as delivered will consist of twenty (20) hours of ground instruction, fourteen (14) hours of flight instruction, and will be restricted to Aviation Flight Majors only. Upon successful completion with a grade of C or better, credit will be posted for AF 201A and 201B and the student will be able to enroll in AF 203. Credit in AF 199 does not count in the Aviation Flight major. Departmental approval required.

AF200 - Primary Flight Theory 200-3 Primary Flight Theory. Prepares the beginning aviation student for the FAA Private Pilot Written Examination. Consists of instruction in aerodynamics, FAA regulations, primary navigation, use of computer, weather, and radio navigation.

AF201A - Primary Flight I 201A-3 Primary Flight I. Provides flight instruction in preparation for solo flight. Consists of dual flight instruction, limited solo flight and ground instruction in conjunction with each training flight and other flight-related topics. Restricted to admission to the SIUC aviation flight program.

AF201B - Primary Flight II 201B-3 Primary Flight II. Provides flight instruction in preparation for the acquisition of the private pilot certificate. Consists of dual flight instruction, solo flight, and ground instruction in conjunction with each training flight and other flight-related topics. Prerequisite: AF 201A or FAA private pilot certificate.

AF202 - Flight-Basic & Intermed Theory 202-3 Flight - Basic and Intermediate Theory. Instruction in Federal Aviation Administration regulations pertaining to commercial flight operations. Includes advanced instruction in aerodynamics, weather and safe operation of aircraft. Prerequisite: AF 200.

AF203 - Flight-Basic 203-5 Flight - Basic. Beginning course in preparation for the Commercial Certificate. Major emphasis is upon solo and solo cross-country flight, with ground instruction in conjunction with each training flight and other flight related topics. Prerequisite: AF 201 and a valid Private Pilot Certificate. Special approval needed from the department.

AF204 - Flight - Intermediate 204-5 Flight - Intermediate. Continuing preparation for the Commercial Certificate. Including dual, solo and night flight instruction and advanced maneuvers. Ground instruction is provided in conjunction with each training flight. Prerequisite: AF 203.

AF205 - Flight-Instrument Theory 205-3 Flight - Instrument Theory. Course is directed to the theory of flight by instrument. Includes classroom instruction in Federal Aviation Administration regulations pertaining to instrument flight, navigation by radio aids, aviation weather, and function, use, and limitations of instruments required for instrument flight. Prerequisite: AF 202.

AF206A - Flight-Instrument I 206A-2 Flight-Instrument I. The course continues preparation for the Commercial Certificate. Includes instrument flight instruction. Prerequisite: AF 203, AF 204. Special approval needed from the department.

AF206B - Flight-Instrument II 206B-2 Flight-Instrument II. The course continues preparation for the Commercial Certificate. Includes instrument flight instruction. Prerequisite: AF 206A. Special approval needed from the department.

AF207A - Flight Advanced 207A-2 Flight Advanced. This course completes the requirements for the Commercial Pilot Certificate. Includes dual and solo flight maneuvers. Prerequisite: AF 206A, AF 206B.

AF207B - Flight Multi-Engine Operations 207B-2 Flight Multi-Engine Operations. Prepares the student for the FAA Multi-Engine rating (airplane). Includes multi-engine flight instruction and individual ground instruction. Prerequisite: AF 207A.

AF210 - Human Factors Aviation 210-4 Human Factors for Aviators. Provide the student specialized instruction in the areas of: physiological aspects of aviation, psychological aspects of aviation, aeronautical decision making and crew resource management. This course is writing intensive and reflects the College's Communication-Across-the-Curriculum initiative. Prerequisite: AF 202, ENGL 101.

AF211 - Aviation Weather 211-3 Aviation Weather. The course will provide both understanding and application of weather theory in relation to commercial flight operations. This course includes regulations issued by the Federal Aviation Administration relating to weather and safe flight. Problem based learning situations and presentations in the classroom on the adverse effects of weather are presented to increase hazardous weather awareness for pilots. Prerequisite: AF 200 or passed FAA Private Pilot written exam.

AF220 - Practicum Air Carrier Ops 220-2 Practicum in Air Carrier Operations. Students gain practical experience and training by participating as flight officers on passenger aircraft flights. Enables students to practice, under close supervision, the role of first officer within a passenger carrier format. Course includes 20 hours of flight time and a minimum of 40 hours pre- and post-flight activities and instruction. Mandatory Pass/Fail. Prerequisite: AF 207B. Special approval needed from the department.

AF260 - Reciprocation & Jet Air System 260-4 Reciprocation and Jet Airplane Systems. Students will have knowledge of construction, operation, and components of reciprocating and jet powerplants. They will understand the operation and components of cabin pressurization and air conditioning systems, flight control systems, landing gear systems, fuel systems, electrical systems, antiicing systems, and fire detection systems.

AF299 - Continuing Enrollment 299-1 to 6 Aviation Flight Continuing Enrollment. This course is to be taken to maintain continuing enrollment for flight students who have not finished the requirements of their degree program. Restricted to Aviation Flight or Aviation Management majors or consent of department.

AF300A - Flight-Instructor I 300A-1 Flight-Instructor I (Airplane). First of two university courses to prepare a commercial pilot for a FAA Flight Instructor Certificate. Prerequisite: AF 207A. Special approval needed from the department.

AF300B - Flight-Instructor II 300B-1 Flight-Instructor II (Airplane). Second of two university courses to prepare a commercial pilot for a FAA Flight Instructor Certificate. Prerequisite: AF 300A. Special approval needed from the department.

AF301 - Flight-Instructor Multi-Engine 301-1 Flight-Instructor (Airplane-Multi-Engine). This course consists of 5 hours of dual flight instruction and 10 hours of classroom instruction. Prepares the holder of a flight instructor certificate for the addition of the multi-engine flight instructor rating. Prerequisite: AF 300A, AF 300B.

AF302 - Flight-Instructor Instrument 302-1 Flight-Instructor (Airplane Instrument). Designed to prepare the flight instructor to teach instrument flying, and to acquire the Instrument Flight Rating. Course consists of 10 hours of dual flight instruction and 15 hours of classroom instruction. Prerequisite: AF 300A, AF 300B.

AF303 - Instructor-Ground School 303-3 Flight Instructor Ground School. This course is designed to aid the student who is obtaining a flight instructor's rating. It will cover principles to teaching as well as practical aspects of teaching flight maneuvers necessary for instruction. Prerequisite: AF 205.

AF305 - Airline Turbine Aircraft Ops 305-3 Airline and Turbine Aircraft Operations. This course uses a combination of class lectures and computer based flight training to develop an understanding of airline operational requirement and turbine aircraft operations. Topics include: turbine aircraft systems, Federal Aviation Regulation part 121 regulations, airline operational specifications, advanced aircraft avionics, advanced weather avoidance, crew resource management and airline career professional development. The course format includes a two hour lecture period and a two hour computer based flight training device session per week. Prerequisite: AF 207B.

AF306 - Introduction to TAA 306-2 Introduction to Technically Advanced Aircraft Operations. This course uses a combination of orientation and simulation lessons to develop an understanding of Technically Advanced Aircraft (TAA) systems, navigation and autopilot. The student will develop the skills required to perform scenario based training missions in a TAA Flight Training Device (FTD). The course consists of 10 hours of orientation lessons and 16 hours of FTD lessons. Prerequisites: AF 206A and AF 206B, or consent of the department.

AF311 - Aviation Weather II 311-1 Aviation Weather II. This course prepares the student to take manual surface weather observations. Students will participate in recording and coding METAR aviation surface weather observations. Prerequisite: AF 211 with a C or better or concurrent enrollment allowed in AF 211.

Aviation Flight Faculty

Biggs, V. Eugene, Assistant Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1971.

Carter, Kim, Senior Lecturer, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1996.

Goetz, Steven, Assistant Professor, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 2011.

Harrison, Bryan, Assistant Professor, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 2007.

Kampe, David, Senior Lecturer, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1997.

Kaps, Robert W., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1996.

NewMyer, David, Professor, Emeritus, Aviation Management and Flight, Ph.D., Southern Illinois University Carbondale, 1987.

Pavel, Samuel, Associate Professor, Ph.D., University of Notre Dame, 2001.

Robertson, Michael, Associate Professor, M.S., Southern Illinois University Carbondale, 2006.

Romero, Matthew, Assistant Professor, M.P.A., Southern Illinois University Carbondale, 2009.

Ruiz, Jose, Professor, Ph.D., Southern Illinois University Carbondale, 2003.

Ruiz, Lorelei, Associate Professor/Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1997.

Thornhill, Gerald, Senior Lecturer, M.S., Central Missouri State University, 1993.

Voges, John K., Associate Professor, Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1999.

Widick, Leland, Assistant Professor, Emeritus, Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1994.

Wilson, Keith, Senior Lecturer, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1997.

Aviation Management

The Aviation Management major is designed to build upon technical training in aviation maintenance, flight, avionics technology, air traffic control, aircraft operations support or other aviation-related fields. The technical training may be gained through Southern Illinois University Carbondale, other post-secondary institutions, proprietary schools, and military, government agencies (international or domestic) or through government certified flight or maintenance training schools. To be considered for enrollment into the Aviation Management program, prospective students must first obtain admission to the University. To be approved for entry into the program, a separate application is required.

Before beginning 300-level Aviation Management coursework, all AVM students are expected to have an aviation-related background consisting of a prior aviation associate degree, a military aviation background, civil aviation background or similar. If a prior aviation background is not acquired prior to admission, the student will be required to take one of the Minors in Aviation Management.

A C or better grade is required for all Aviation Core Courses to satisfy the requirements for a major in Aviation Management.

The Aviation Management program has signed a number of “Program Articulation Agreements” with aviation-related community college degree programs in order to facilitate the transfer of community college aviation students to SIU. These agreements take full advantage of the Capstone Option for admission to the Bachelor of Science in Aviation Management. This option is available to either on- or off-campus students. The community colleges with which SIU has signed such an agreement include: Craven Community College (NC), Gateway Technical College (WI), Southwestern Illinois College (IL), Indian Hills Community College (IA), Iowa Lakes Community College (IA), Kishwaukee College (IL), Lincoln Land Community College (IL), Mt. San Antonio College (CA), Mercer County Community College (NJ), Miramar College (CA), Mountain View College (TX), Palomar College (CA), and Rock Valley College (IL). If you have questions about how these agreements apply to your personal situation, contact your community college aviation program representative or the academic advisor in the Aviation Management program.

Students who major in aviation management have the opportunity to participate in the following aviation management-related internship programs:

1. The American Airlines Flight Operations Internship.
2. Cape Air/Nantucket Airlines First Officer Program.
3. The Delta Airlines Internship in Flight Operations and Management.
4. The United Airlines/SIUC Cooperative Education Program in Aviation Flight and Aviation Management.
5. The Illinois Aviation Trades Association Intern Program.
6. Internships at various Midwest airports.
7. AAR Corporation.

These internship programs enrich an undergraduate student’s academic experience by “extending the SIU campus” to aviation headquarters or business locations around the nation. Graduates of the Aviation Management program obtain professional, technical and management positions in aviation manufacturing, the airlines, general aviation, military aviation and government agencies related to aviation.

Bachelor of Science Degree in Aviation Management, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Major in Aviation Management	42
Core Requirements: 27 hours selected from the following as approved by the advisor: AVM 300, AVM 301, AVM 302 or AVM 349, AVM 371, AVM 373, AVM 377, AVM 385, AVM 386, AVM 402	27
Six hours selected from AVM 360 or AVM 361, AVM 375, AVM 450	6
Nine hours of additional advisor approved, 300- or 400-level Aviation Management courses or Department approved electives	9
AVM Minor or Approved Career Electives	39
Total	120

Professional Pilot Specialization

The professional pilot specialization allows students who have completed the AAS degree in Aviation Flight at SIUC to complete the required credit hours to be eligible for a 500 flight-hour reduction for the Restricted Airline Transport Pilot (R-ATP) certificate.

Degree Requirements	Credit Hours
A.A.S. degree in Aviation Flight	60
University Core Curriculum Requirements (Capstone)	18
Requirements for Major in Aviation Management	42
Core Requirements: AVM 300, AVM 301, AVM 302, AVM 371, AVM 373, AVM 377, AVM 385, AVM 386, or AVM 402	27
R-ATP Courses: AVM 360 or AVM 361, and AVM 375	6
Option	9
Certified Flight Instructor (CFI):	
AF 300A, AF 300B, AF 303	5
AVM 378, AVM 460	3
AF 311	1
OR	
Executive Flight:	
AF 220 or AF 305	2(3)
AVM 378, AVM 460	6
AF 311	1
Total	120

Airport Management and Planning Minor

The purpose of this minor is to provide preparation for students who wish to enter the airport-related segment of the aviation industry. This minor requires a total of 15 semester hours of coursework: Aviation Management 370, 372, 374, Political Science 340 and one additional Aviation Management course at the 300- or 400-level. All course prerequisites must be completed prior to enrolling in each course. Students wishing to enter this minor must do so by contacting the Aviation Management advisor.

Aircraft Product Support Minor

The minor in Aircraft Product Support is a multi-disciplinary minor offered by the Aviation Management and the Aviation Technologies Program. The purpose of this minor is to provide additional preparation for students who wish to enter the field of aircraft product support with aerospace manufacturers, suppliers, airlines, the military and related aviation/aerospace industry segments. The courses required to complete this minor include: Aviation Management 301 or 376, 461, Aviation Technologies 370, 380, 390 and one additional approved course from either Aviation Management or Aviation Technologies degree program. All prerequisites for these courses must be fulfilled prior to enrollment in each course. All students who wish to enroll in this minor must do so through either the Aviation Management advisor or the Aviation Technologies advisor. Aviation Management students must complete Aviation Management 301 in their major. Aviation Technologies students must complete Aviation Management 376 in their major.

Air Traffic Control Minor

The purpose of the Air Traffic Control (ATC) Minor is to prepare students for entry into the ATC career field. Students completing the minor will have the basic knowledge to enter the ATC discipline as air traffic controllers or other ATC related positions.

The ATC Minor requires a minimum of 13 semester hours of coursework: AF 205-Instrument Theory (or FAA Instrument Rating), AF 211-Aviation Weather I, AF 311-Aviation Weather II, AVM 361-Basic Air Traffic Control, AVM 362-Advanced Air Traffic Control, AVM 460-National Airspace System.

Aviation Management Courses

AVM258 - Aviation Work Experience 258-1 to 30 Aviation Work Experience. Credit granted for prior job skills, management-worker relations and supervisory experience while employed in the aviation industry. Credit will be established by program evaluation. This credit may be applied only to the approved career electives requirement of the aviation management degree, unless otherwise determined by the program chair. Restricted to aviation management major.

AVM259 - Aviation Occupational Educ Cr 259-1 to 60 Aviation Occupational Education Credit. A designation for credit granted for past occupational education experiences related to the student's educational objectives in the aviation field. Credit will be established by program evaluation. This credit may be applied only to the approved career electives requirement of the aviation management degree, unless otherwise determined by the program chair. Restricted to aviation management major.

AVM298 - Multicultural Applied Exper 298-1 Multicultural Applied Experience. (Multicultural Applied Experience Course) An applied experience, service-oriented credit in American diversity involving a group different from the student who elects the credit. Difference can be manifested by things such as age, gender, ethnicity, nationality, political affiliation, race, or class. The student can sign up for the one credit experience in the same semester he or she fulfills the multicultural requirement for the University Core Curriculum, or the credit can be coordinated with a particular Core Course on American diversity, although neither is a requirement. Students should consult the respective program for course specifications regarding grading, work requirements and supervision. Special approval needed from the site representative, faculty supervisor, and department chair.

AVM300 - Aviation Mgmt Research 300-3 Introduction to Aviation Management Research. An introduction to library resources, electronic media resources and formal academic writing styles common to aviation management research. Introduction to basic theories, concepts and practices pertinent to aviation management. May be independent study. Restricted to AVM major.

AVM301 - Aviation Mgmt Writing Comm 301-3 Aviation Management Writing and Communication. This course is a study of the writing and communication skills used by managers in the aviation industry. Foundations of technical writing style and documentation are followed by descriptions of specific aviation-related technical writing applications such as correspondence, grants, manuals, progress reports and

promotional materials. Specialized skills such as conflict resolution, technical presentations and electronic communication complete the course.

AVM302 - Curr Aviation Mgmt Pract/Proc 302-3 Current Aviation Management Practices and Processes. This course is a study of the structures, processes and skills involved in aviation management. Specific issues such as job design, decentralization, planning, decision-making and leadership will be discussed and related to aviation industry. Prerequisite: AVM 301.

AVM303 - Intro to Aviation Mgmt 303-3 Introduction to Aviation Management. Provides an overview of the aviation industry, available career paths, major challenges, key private and governmental agencies, and the skills and knowledge necessary to succeed within the industry.

AVM320 - Aviation Internship 320-1 to 12 Aviation Internship. Each student will be assigned to a program approved work site engaged in activities related to the student's academic program and career objectives. The internship must be performed with an aviation-related organization. The student will be assigned to an internship position and will perform duties and services in an instructional setting as previously arranged with the sponsoring work site supervisor. Prior program approval, supervisor evaluations, and student reports are required. Hours and credits to be individually arranged.

AVM349 - Readings in Aviation Mgmt 349-3 Readings in Aviation Management. The use of written and electronic media resources relevant to aviation management and the development of an aviation management research bibliography. The use of bibliographic resources to produce written comparative or persuasive research reports. May be independent study. Prerequisite: AVM 300. Restricted to AVM major.

AVM350 - Aviation Career Subjects 350-1 to 32 Aviation Career Subjects. In-depth competency, skill development and exploration of innovative techniques and procedures used in aviation businesses, government operations related to aviation and other aviation related organizations. Subjects and topics may include present or planned future operations as well as domestic or international enterprises. Study of program approved topics or projects may include workshops, special short courses, seminars, research or independent study. Special approval needed from the instructor.

AVM360 - Air Traffic Control 360-3 Air Traffic Control System, Procedures, and Rules. This course introduces students to the history, evolution, and operation of the United States Air Traffic Control (ATC) System. Emphasis will be placed on system architecture, ATC regulation, separation standards, and the role of the ATC specialist. Current issues in ATC and the future of the ATC system will be addressed. This course is approved for the Reduced Airline Transport Pilot (R-ATP) certificate in the Aviation Management Professional Pilot Specialization. Prerequisite: FAA Private Pilot Certificate or Departmental Consent.

AVM361 - Basic ATC 361-3 Basic Air Traffic Control. This course is the first course in a series designed to prepare students for a career as an Air Traffic Controller or in Air Traffic Control support and consulting positions. Students will become familiar with the structure of the National Airspace System (NAS) and the structure of the FAA Air Traffic Control system. Prerequisites: AF 205; AF 311.

AVM362 - Advanced ATC 362-3 Advanced Air Traffic Control. This course is the second course in a series designed to prepare students for a career as an Air Traffic Controller or in Air Traffic Control support and consulting positions. Students will learn standard ATC phraseology and separation standards used in Terminal and Enroute facilities. The course is a combination of classroom lecture and ATC simulation. Prerequisite: AVM 361.

AVM370 - Airport Planning 370-3 Airport Planning. To acquaint the student with the basic concepts of airport planning and construction, as well as an investigation of various community characteristics and resources.

AVM371 - Aviation Industry Regulation 371-3 Aviation Industry Regulation. Students will have a thorough understanding of the US regulatory system. Topics include the history of administrative law, political influence in the regulatory system, current aviation regulations and regulatory agencies, how to create/modify/remove regulations, and how to work within the complex regulatory environment.

AVM372 - Airport Management 372-3 Airport Management. A study of the operation of an airport devoted to the phases of lighting, fuel systems, field marking, field buildings, hangars, and surrounding community.

AVM373 - Airline Management 373-3 Airline Management. A study of the administrative aspects of airline operation and management including a detailed study of airline organizational structure.

AVM374 - General Aviation Operations 374-3 General Aviation Operations. A study of general aviation operations including fixed base operations (fuel, sales, flight training, charter, etc.), corporate aviation (business aviation, corporate flight departments, executive air fleets, etc.) and the general aviation aircraft manufacturing industry.

AVM375 - Legal Aspects of Aviation 375-3 Legal Aspects of Aviation. The student will develop an awareness of air transportation. The course will emphasize basic law as it relates to contracts, personnel, liabilities, and legal authority of governmental units and agencies. Lecture three hours.

AVM376 - Aviation Maintenance Mgmt 376-3 Aviation Maintenance Management. To familiarize the student with the functions and responsibilities of the aviation maintenance manager. Maintenance management at the fixed base operator, commuter/regional airline, and national air carrier levels will be studied. Aviation maintenance management problems areas will be reviewed using the case study method.

AVM377 - Aviation Safety Management 377-3 Aviation Safety Management. This course will survey the various aspects of aviation flight and ground safety management. Weather, air traffic control, mechanical and human factors in aviation safety management will be reviewed. Case studies of individual aviation accidents and incidents will be analyzed.

AVM378 - Av Security Regulations & Mgmt 378-3 Aviation Security Regulations and Management. Provides a thorough review of the aviation security environment including the key regulations governing aviation security, the key agencies involved in regulating aviation security, and impacts of aviation security regulations on airlines, airports and general aviation companies. Pre and Post 9/11 attack comparisons will be identified in the class and case studies of aviation security problems will be used to illustrate solutions to the problem.

AVM385 - Air Transport Labor Relations 385-3 Air Transport Labor Relations. The legislation governing labor relations in the U.S. consists of two pieces of legislation, the Railway Labor Act for labor relations in the railroad/airline industries; and the National Labor Relations Act for all other industrial sectors. This course focuses on the examination of air transport labor relations in the context of these key laws. Students will understand the Constitutional basis for labor law, how labor law affects the creation of regulations under 14 CFR particularly flight crew workload, required number of flight crew, flight deck operation, flight safety, and operations in the National Airspace System. Restricted to Aviation Management major.

AVM386 - Fiscal Aspects of Aviation Mgmt 386-3 Fiscal Aspects of Aviation Management. An introduction to the fiscal problems encountered in the administration of aviation facilities. Special approval needed from the advisor.

AVM401 - Issues in Aviation Industry 401-3 Analysis of Issues in the Aviation Industry. The identification and study of current economic, regulatory or operational issues impacting the aviation industry. The use of both written and oral reports to present a critical analysis of selected topics. May be independent study. Not for graduate credit. Prerequisite: AVM 349. Restricted to AVM major.

AVM402 - Avia Industry Career Developmt 402-3 Aviation Industry Career Development. Provides description of the employment in the aviation industry, as well as applying for such employment. Also covered: professionalism, professional ethics/integrity, workplace behavior, personal assessment, resume construction, interviewing skills, writing cover letters, the use of references, networking, employment referral agencies and continuing education. Not for graduate credit. Restricted to Aviation Management major.

AVM450 - Mngmt Problems in Aviation 450-3 Management Problems in the Aviation Industry. The identification and study of problems related to management within the aviation industry. The application of

aviation management theories, concepts and practices to the identified management problems. The use of written and electronic media research resources to produce a written problem solving report. May be independent study. Not for graduate credit. Prerequisite: AVM 401. Restricted to AVM major.

AVM460 - National Airspace System 460-3 National Airspace System. The evolution, current state, and future of the National Airspace System with emphasis on its current and future impact on the domestic and international aviation industry. Defines the Federal Aviation Administration's role in the operation, maintenance, and planned modernization of Air Traffic Control facilities, airways and navigational aids, landing aids, and airports. The users of the system, their needs, and issues with the system's operation and planned modernization are examined. Not for graduate credit. Prerequisite: AVM 360.

AVM461 - Aviation Product Support Mgmt 461-3 Aviation Product Support Management. This course will acquaint students with concepts and techniques used in analysis and development of an aviation product support program. Concepts discussed in this course will provide a basic understanding of complexities and issues associated with design of a fully integrated aviation product support program. Design considerations, integration of product support into the total product design, support planning and post-delivery support will be covered. Not for graduate credit. Prerequisite: AVM 376.

AVM551 - Aviation Policy Law & Reg 551-3 Aviation Policy, Law, and Regulation. (Same as POLS 551) Examination of the history of American aviation policy, law and regulation. The course focuses primarily on the development, implementation and enforcement of aviation policies and regulations at the federal level. Special attention is paid to the interaction of various government agencies and constituency groups, such as the aircraft industry, airport authorities, airlines, private pilots and passengers. In addition to the historical survey, students will analyze current policy and regulatory trends and identify future problems and opportunities for American aviation policy. Restricted to enrollment in MPAA graduate program or consent of instructor.

AVM552 - Adv Airport Administration 552-3 Advanced Airport Administration. (Same as POLS 552) This course will address the role and function of the airport administrator, especially related to the tasks of developing, operating and maintaining various airport services to meet the needs of key airport users. This course will study key airport administration cases at primary, commercial service, reliever and general aviation airports. Meeting key airport regulations concerning operations and security will be a focus of the course. Restricted to enrollment in MPAA graduate program or consent of instructor.

AVM553 - Adv Airport Safety Admin 553-3 Advanced Airport Safety Administration. (Same as POLS 553) The Aviation Safety Administrator's job function and responsibility for safety and accident prevention within an aviation organization is examined using the case study method. The relevant theory, concepts, procedures and techniques of resource allocation, organizational design, decision modeling, task assignment, delegation of authority and responsibility, establishment of organizational goals and priorities and risk management as they relate to Aviation Safety are included. The job functions of an Aircraft Accident Investigation Team and of an Aviation Safety Inspector will be studied. Aviation safety administration literature will be reviewed. Restricted to enrollment in MPAA graduate program or consent of instructor.

AVM554 - Aviation Planning 554-3 Aviation Planning. (Same as POLS 554) Examination of aviation planning at the international, federal, state and local levels. The course focuses primarily on federal aviation planning, but considerable attention is paid to the interdependent relationship between the various levels of planning. Special attention is paid to the planning process and the role of various agencies and client groups within the aviation community. Restricted to enrollment in MPAA graduate program or consent of instructor.

Aviation Management Faculty

Biggs, V. Eugene, Assistant Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1971.

Carter, Kim, Senior Lecturer, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1996.

Goetz, Steven, Assistant Professor, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 2011.

Harrison, Bryan, Assistant Professor, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 2007.

Kampe, David, Senior Lecturer, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1997.

Kaps, Robert W., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1996.

NewMyer, David, Professor, Emeritus, Aviation Management and Flight, Ph.D., Southern Illinois University Carbondale, 1987.

Pavel, Samuel, Associate Professor, Ph.D., University of Notre Dame, 2001.

Robertson, Michael, Associate Professor, M.S., Southern Illinois University Carbondale, 2006.

Romero, Matthew, Assistant Professor, M.P.A., Southern Illinois University Carbondale, 2009.

Ruiz, Jose, Professor, Ph.D., Southern Illinois University Carbondale, 2003.

Ruiz, Lorelei, Associate Professor/Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1997.

Thornhill, Gerald, Senior Lecturer, M.S., Central Missouri State University, 1993.

Voges, John K., Associate Professor, Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1999.

Widick, Leland, Assistant Professor, Emeritus, Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1994.

Wilson, Keith, Senior Lecturer, Assistant Chief Flight Instructor, M.S., Southern Illinois University Carbondale, 1997.

Aviation Technologies

Whether general aviation aircraft or transport, modern aircraft require highly trained technicians to manage hardware, troubleshoot systems and maintain airframe structures and powerplants. The Aviation Technologies program is ranked among the best in the country and was developed with input from industry representatives and the Federal Aviation Administration (FAA) to provide the requisite skills and broad educational experience necessary in today's competitive environment. Optional paths within the major provide a great deal of flexibility in preparing for a career in the aviation industry. Students may pursue the FAA approved airframe and powerplant certificate in a five or seven semester sequence of coursework or they may include the airframe and powerplant certificate, with additional coursework, as part of their four-year bachelor's degree in Aviation Technologies.

The Bachelor of Science degree program in Aviation Technologies is designed to enhance technical training students have received in aviation maintenance or electronics. This technical training may be acquired through SIU (FAA Airframe and Powerplant Certificate), at other post-secondary institutions, in the military, or in the case of aviation maintenance, at other FAA approved maintenance schools certified under F.A.R. Part 147.

Aviation Technologies has signed a number of Program Articulation Agreements with aviation-related community college degree programs to facilitate the transfer of these particular community college aviation students to SIU. The community colleges with which SIU has signed such an agreement include: Southwestern Illinois College (IL), Rock Valley College (IL), and Indian Hills Community College (IA).

Many students entering the Aviation Technologies program are encouraged to have completed an appropriate associate degree or its equivalent under the provisions of the Capstone Option (See Capstone Option section). The Capstone Option allows qualified students to fulfill their degree requirements by completing no more than 60 semester hours of coursework beyond their associate degree. Students may choose from three specializations: Aircraft Maintenance, Helicopter Maintenance and Aviation Electronics.

Courses in each of these areas have been selected and designed to provide the student with optimum exposure to theory in the classroom and develop practical, hands-on skills both in the hangar and in specially-designed, task-dedicated laboratories. The Aviation Technologies facilities, located at Southern Illinois Airport between Carbondale and Murphysboro, Illinois, provides students with more than 14 million dollars of the best available equipment including fixed and rotary wing aircraft, airline-type cockpit procedure trainers (CPT's), an advanced composite structures laboratory and computer laboratory. Students should expect to spend \$500 to \$1,000 for a tool kit. In addition to university tuition and fees, lab fees are assessed for the lab portions of appropriate courses.

Executives in the aviation industry constitute an advisory committee, which serves the Aviation Technologies program. Current members are: Joe Cooley, United Parcel Service Airlines, Louisville, KY; Terry Washow, Ryan International Airlines, Chicago, IL; Jim Fisher, Rockwell Collins Avionics, Cedar Rapids, IA; David Gallagher, G. E. Aircraft Engines, Cincinnati, OH; Patrick Mapes, Battle Creek, MI; Joe Schuster, Jet Aviation, Cahokia, IL; Maurice Woodruff, The Boeing Company, St. Louis, MO; Bruce Brown and David Gallagher, G.E. Aircraft Engines, Cincinnati, OH.

FAA Approved Airframe and Powerplant Certificates Only

Degree Requirements	Credit Hours
First Semester: MATH, AVT 101, AVT 110, AVT 111, AVT 113	22
Second Semester: AVT 112, AVT 116, AVT 203, AVT 204, AVT 206, AVT 214	22
Third Semester: AVT 211, AVT 212, AVT 213, AVT 310	20
Fourth Semester: AVT 305, AVT 315, AVT 316, AVT 327	20
Summer Session: AVT 340, AVT 345 ¹	12
Total	96

¹ All Aviation Technologies coursework requires a C average for graduation. To meet FAA requirements, all courses required for the A&P must be passed with C or higher.

Bachelor of Science Degree in Aviation Technologies, College of Applied Sciences and Arts

Aviation Technologies Major - Aircraft Maintenance Specialization

The aircraft maintenance specialization provides students who have completed a FAA approved airframe and powerplant program with the opportunity to advance their technical knowledge and skills in flight management systems, advance composites, advance propulsion systems, and supply chain logistics. Additional elective courses complement this specialization.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Aircraft Maintenance Specialization	43
Core Requirements ¹	10
AVT 305; AVT 310	5

Degree Requirements	Credit Hours
Specialization Requirements ²	15
AVT 405; AVT 410; AVT 416; AVT 380; AVT 390	3
Specialization Electives	18
AVT 301 AND AVT 302, AVT 303, AVT 304 AND AVT 306, AVT 321, AVT 370, AVT 422; AVM 376, AVM 385, TRM 364; or advisor approved electives.	
Technical or Career Electives - An Associate in Applied Science degree or equivalent certification in Aviation Maintenance (Airframe and Powerplant) from an accredited college, community college, or technical institute meets this requirement. ³	38
Total	120

1 All Aviation Technologies coursework requires a C or higher for graduation. To meet FAA requirements, all courses required for the A&P must be passed with C or higher.

2 All Aviation Technologies coursework requires a C or higher for graduation. To meet FAA requirements, all courses required for the A&P must be passed with C or higher.

3 All Aviation Technologies coursework requires a C or higher for graduation. To meet FAA requirements, all courses required for the A&P must be passed with C or higher.

Bachelor of Science Degree in Aviation Technologies, College of Applied Sciences and Arts

Aviation Technologies Major - Aviation Electronics Specialization

The Aviation Electronics specialization is designed to accommodate freshman or transfer students. Freshmen can pursue a combined electronics and aviation electronics curriculum or a combined FAA Airframe and Powerplant Certificate and aviation electronics curriculum. Transfer maintenance students (airframe and powerplant) will develop flight line maintenance and troubleshooting skills in aviation electronics. Additional elective courses complement this specialization.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
Requirements for Aviation Electronics Specialization	42
Core Requirements ¹	10
AVT 305; AVT 310	5
Specialization Requirements ²	20
AVT 321; AVT 317; AVT 318; AVT 405; AVT 422	3

Degree Requirements	Credit Hours
AVT 465	5
Specialization Electives ³	12
AVT 301 & AVT 302, AVT 303, AVT 304 & AVT 306, AVT 370, AVT 380, AVT 390, AVT 410, AVT 416; AVM 376, AVM 385, TRM 364; or advisor approved electives.	
Technical or Career Electives	37
An Associate in Applied Science degree or equivalent certification in Aviation Maintenance (Airframe and/or Airframe and Powerplant) or Electronics from an accredited college, community college, or technical institute meets this requirement.	
Total	120

1 All Aviation Technologies courses require a minimum grade of C

2 All Aviation Technologies courses require a minimum grade of C

3 All Aviation Technologies courses require a minimum grade of C

Bachelor of Science Degree in Aviation Technologies, College of Applied Sciences and Arts

Aviation Technologies Major - Aviation Maintenance Management Specialization

The Aviation Maintenance Management specialization is an online degree completion program that allows professionals in the aviation and electronics industries to complete their bachelor degree while working full time. This specialization is ideally suited for individuals who fall into at least one of the following categories:

1. Completed an FAA Part 147 Aircraft Maintenance Technician School
2. Currently hold Airframe and/or Powerplant certification
3. Completed an associate degree in aircraft maintenance or electronics
4. Has equivalent civilian or military work experience

The Aviation Maintenance Management curriculum allows students to advance their knowledge in the subjects of avionics communication and navigation systems; aircraft supply chain logistics; aircraft reliability, maintainability and fault prediction; aviation project management; aerospace financial practices, and other technical subjects.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Aviation Maintenance Management Specialization	30
AVT 329	3

Degree Requirements	Credit Hours
AVT 370	3
AVT 475	3
AVT 478	3
AVT 380	3
AVT 485	3
AVT 488	3
AVT 390	3
IMAE 470A	3
IMAE 450 or TRM 470	3
Aviation Technologies Internship/Cooperative Experience	14
AVT 319 / AVT 320 or AVT 358 or approved electives	
Technical or Career Electives ¹	37
Total	120

¹ An Associate in Applied Science degree or equivalent certification in Aviation Maintenance (Airframe and Powerplant) from an accredited college, community college, or technical institute meets this requirement.

Bachelor of Science Degree in Aviation Technologies, College of Applied Sciences and Arts

Aviation Technologies - Helicopter Maintenance Specialization

The helicopter maintenance specialization provides students who have completed an FAA approved airframe and powerplant program with the opportunity to advance technical skills in helicopter theory, maintenance and overhaul, and inspection. Additional elective courses complement this specialization.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
Requirements for Helicopter Maintenance Specialization	46
Core Requirements	10
AVT 305; AVT 310	5

Degree Requirements	Credit Hours
Specialization Requirements ¹	18
AVT 301; AVT 304	3
AVT 302; AVT 306	6
Specialization Electives ²	18
AVT 303, AVT 321, AVT 370, AVT 380, AVT 390, AVT 405, AVT 410, AVT 416, AVT 422; AVM 376, AVM 385, TRM 364; or advisor approved electives.	
Technical or Career Electives ³	33
An Associate in Applied Science degree or equivalent certification in Aviation Maintenance (Airframe and Powerplant) from an accredited college, community college, or technical institute meets this requirement.	
Total	120

1 All Aviation Technologies courses require a minimum grade of C.

2 All Aviation Technologies courses require a minimum grade of C.

3 All Aviation Technologies courses require a minimum grade of C.

Aircraft Product Support Minor

The minor in Aircraft Product Support is a multi-disciplinary minor offered by the Aviation Management and the Aviation Technologies programs. The purpose of this minor is to provide additional preparation for students who wish to enter the field of aircraft product support with aerospace manufacturers, suppliers, airlines, the military and related aviation/aerospace industry segments. The courses required to complete this minor include: Aviation Management 301 or 376, 461, Aviation Technologies 370, 380, 390 and one additional approved course from either Aviation Management or Aviation Technologies degree programs. All prerequisites for these courses must be fulfilled prior to enrollment in each course. All students who wish to enroll in this minor must do so through either the Aviation Management advisor or the Aviation Technologies advisor. Aviation Management students must complete Aviation Management 301 in their major. Aviation Technologies students may complete Aviation Management 376 in their major.

Aviation Technologies Courses

AVT101 - Applied Science 101-4 Applied Science. Students will understand and demonstrate the application of physical laws including weight and balance, pressure, force, motion, mechanical advantage, heat and sound. The student will interpret blueprints and schematic diagrams, perform basic mechanical drawing using drawing instruments to accomplish orthographic projections, sections and dimensioning of working drawings. Hydraulic tubes, hoses and fittings will be studied. Course fee: \$40.

AVT110 - Aircraft Structures 110-4 Aircraft Structures. Students will be able to identify and select materials employed in aircraft construction. Using appropriate FAR's, they will demonstrate competence in repair of honeycomb, fiberglass, welded, wood, or fabric aircraft members. The student will inspect

aircraft members for defects and, if necessary, inspect completed repairs for airworthy condition. Course fee: \$55.

AVT111 - Materials Processing 111-5 Materials Processing. Students will be able to identify, select, and inspect aircraft hardware and materials. They will be able to select and apply appropriate cleaning materials and to implement corrosion controls. They will become proficient in the use of precision measurement equipment and related inspection tools. Course fee: \$35.

AVT112 - Aircraft Electricity 112-5 Aircraft Electricity. Students will have basic knowledge of electricity generation, AC and DC circuitries, and controls. They will be able to solve problems associated with electrical measurement (AC and DC), circuit interpretations and inspection, aircraft electrical load analysis, circuit malfunctions, circuit or component servicing, and basic aircraft electronics. Prerequisite: AVT 101, MATH 108 or 125. Course fee: \$25.

AVT113 - Federal Aviation Regulations 113-3 Federal Aviation Regulations. Students will be able to select and use FAA technical and legal publications in order to perform the duties of an aircraft technician. Course fee: \$65.

AVT116 - Aircraft Instruments 116-3 Aircraft Instruments. Students will have a knowledge of operation, installation, marking, and interpretation of synchro and servo systems, aircraft and powerplant instruments. They will be able to install, adjust, and calibrate these instruments in accordance with FAA and manufacturers' recommendations. Prerequisite: AVT 101. Course fee: \$30.

AVT199 - Individual Study 199-1 to 10 Individual Study. Provides students with the opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Special approval needed from the department.

AVT203 - Aircraft Aerodynamics 203-3 Aircraft Aerodynamics. Students will have knowledge of flight theory and factors affecting aircraft in flight. They will explain and compare aircraft design features in subsonic, transonic, and supersonic aircraft. They will be able to assemble and rig various aircraft control systems, analyzing and correcting faulty flight characteristics. Course fee: \$25.

AVT204 - Hydraulics (Aircraft) 204-4 Hydraulics (Aircraft). Students will have a knowledge of fluid theory and applied physics which relates to aircraft hydraulics. They will know the theory of operation, maintenance requirements, and adjustments of various hydraulic components and systems. They will be able to test, inspect, troubleshoot, and service hydraulic systems in accordance with technical specifications. Prerequisite: AVT 101, MATH 108 or 125. Course fee: \$35.

AVT206 - Metals Processing 206-4 Metals Processing. Students will be able to make appropriate sheet metal repairs using correct repair procedures, tools, and materials. They will be required to demonstrate correct use of and interpretation of structural repair diagrams and correct interpretation of charts and tables from AC 43, 13-1B pertaining to materials and methods. Prerequisite: AVT 101, 111, 113, MATH 108 or 125. Course fee: \$50.

AVT211 - Reciprocating Powerplant 211-5 Reciprocating Powerplant. Students will have a knowledge of construction, operation, and timing mechanisms associated with aircraft reciprocating powerplants. They will be able to disassemble, clean, measure, inspect, and reassemble a powerplant to airworthy condition in accordance with appropriate FAA and manufacturers' regulations and practices. Prerequisite: AVT 101, 111, 113, MATH 108 or 125. Course fee: \$60.

AVT212 - Carburetion, Lubrication, Fuel 212-5 Carburetion, Lubrication, and Fuel. Students will be able to demonstrate their competence in identifying fuels, oils, and related system components including carburetors, understanding the operating principles of each. They will be able to inspect, adjust, troubleshoot, and overhaul these components according to manufacturers' and federal regulations. Prerequisite: AVT 101, 111, 113, MATH 108 or 125. Course fee: \$40.

AVT213 - Ignition Systems 213-4 Ignition Systems. Successful students should have a knowledge of the operation, repair, inspection, and service of reciprocating and jet powerplant ignition systems and reciprocating starting systems. They will be able to time, overhaul, and troubleshoot the various components of each system. Prerequisite: AVT 111, 112. Course fee: \$40.

AVT214 - Propellers 214-3 Propellers. Students will have a knowledge of the physical laws and design characteristics governing propeller operation. They will be able to identify components, troubleshoot, and adjust fixed and variable pitch propellers. They will maintain fixed pitch propellers, and governor systems for variable pitch propellers in accordance with FAA and manufacturers' standards. Course fee: \$35.

AVT258 - AV-Tech Work Experience 258-1 to 30 Aviation-Technology Work Experience. Credit granted for prior aviation technologies related job skills, work experience, management-worker relations and supervisory experience while employed in the aviation industry. Credit will be established by program evaluation. This credit may be applied only to the technical or career electives requirement of the aviation technologies degree, unless otherwise determined by the program.

AVT259 - AV-Tech Occup Educ Credit 259-1 to 60 Aviation-Technology Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives in aviation technologies. Credit will be established by program evaluation. This credit may be applied only to the technical or career electives requirement of the aviation technologies degree, unless otherwise determined by the program chair of Aviation Technologies.

AVT301 - Helicopter Theory & Maint Prac 301-3 Helicopter Theory and General Maintenance Practice. The student will have an in-depth knowledge of rotary wing aerodynamics, main and tail rotor systems, rotor blades, primary and secondary controls, and general maintenance practices to include inspection and nondestructive testing. Lecture three hours. Prerequisite: FAA certificate with airframe and powerplant ratings. Departmental approval required.

AVT302 - Helicopter Maintenance Lab 302-6 Helicopter General Maintenance Laboratory. The student will perform general maintenance on rotary wing main rotor systems, tail rotor systems, flight and powerplant control systems to include malfunction analysis, tracking, static and dynamic balancing, rigging, and repair. Co-requisite: AVT 301. Course fee: \$40.

AVT303 - Technical Evolution-Aviation 303-3 Technical Evolution of Aviation. This course will introduce the student to aviation's rich heritage. The coursework will include numerous reading and research assignments to provide the student opportunity to become well acquainted with events, persons and technological developments that have permitted aviation to become what it is today. Emphasis will be placed on the "cause and effect" of selected aviation-related events.

AVT304 - Helicopter Power Train & Insp 304-3 Helicopter Power Train and Inspection. The student will have in-depth knowledge of the operation, function, and inspection of all rotational components of a rotary wing aircraft to include transmission, gear boxes, drive trains, and drive shafts. Prerequisite: AVT 301.

AVT305 - Cabin Envirn/Jet Transport Sys 305-5 Cabin Environment and Jet Transport Systems. Students will understand the operation of and be able to identify the components of flight controls, landing gear, fuel, anti-icing, fire detection, and environmental systems of current jet transport aircraft. They will have knowledge of procedures for aircraft ground handling, APU operation and system servicing. Prerequisite: AVT 203, 212, 213, 310. Course fee: \$50.

AVT306 - Helicopter Power Train Lab 306-6 Helicopter Power Train Laboratory. The student will perform all functions of overhaul concerned with rotary wing transmissions, gear boxes, and drive trains. The student will demonstrate skill in disassembly, inspection, discrepancy analyzation, reassembly, and non-destructive testing. Co-requisite: AVT 304. Course fee: \$40.

AVT310 - Aircraft Electrical Systems 310-5 Aircraft Electrical Systems. Students will have a knowledge of the operation, repair, inspection and service of small and large aircraft electrical systems to include understanding and/or use of maintenance manuals, inspection manuals, schematic diagrams, and electrical systems components. Prerequisite: AVT 112, approved math course. Special approval needed from the advisor.

AVT315 - Powerplant Testing 315-5 Powerplant Testing. Students will have an understanding of the correct procedures and precautions to be observed during engine installation, ground operation, and fuel and oil servicing. They will be required to inspect and troubleshoot reciprocating and jet engines for airworthy condition and interpret engine instrument readings to diagnose engine malfunctions. Prerequisite: AVT 211, 212, 213, 310. Course fee: \$60.

AVT316 - Jet Propulsion Powerplant 316-5 Jet Propulsion Powerplant. Students will be able to apply and understand physics laws related to jet engines; identify and understand the operation of jet engines and their components; inspect, check, repair, troubleshoot and adjust jet engines and accessories; analyze engine performance and interpret operational charts, graphs and tables. Prerequisite: AVT 111, 203, 212. Course fee: \$55.

AVT317 - Intro to Aviation Electronics 317-3 Introduction to Aviation Electronics. An introduction to electron devices used in analog and digital electronics equipment. Device operation analyzed from theoretical perspective and applied to circuits for power supplies, amplifiers, control devices, and communication data bussing. Course is writing intensive and reflects the College's Communication-Across-the-Curriculum initiative. Prerequisite: AVT 112, ENGL 101. Course fee: \$40.

AVT318 - Aviat Electronics Control Syst 318-3 Aviation Electronics Control Systems. Coursework is based upon theory and application of analog and digital control systems. Topics include transducers, control input devices, instrument panel displays and feedback sensor circuits. Data recording and monitoring systems will also be presented. Lecture two hours, laboratory two hours. Prerequisite: AVT 317. Course fee: \$30.

AVT319 - AV-Technologies Internship 319-1 to 15 Aviation Technologies Internship. Each student will be assigned to a program approved work site engaged in activities related to the student's academic program and career objectives. The student will be assigned to an unpaid internship position and will perform duties and services in an instructional setting as previously arranged with the sponsoring work site supervisor. Prior program approval, supervisor evaluations and student reports are required. Hours and credits to be individually arranged. Mandatory Pass/Fail. Special approval needed from the department.

AVT320 - AV Tech Co-op Education 320-1 to 12 Aviation Technologies Cooperative Education. Students will participate in a program approved cooperative education program that includes formal instruction, training, and/or career related work experience. Students may receive a salary or wages and will engage in pre-arranged work assignments related to their academic program and career objectives. Program faculty evaluations, cooperating agency student performance evaluations, and student reports are required. Hours and credit to be individually arranged. Special approval needed from the department.

AVT321 - Radio Theory & Practice 321-3 Radio Theory and Practice. Students will have knowledge of Advanced Radio Theory and Practice including Federal Communications Commission requirements for aircraft station licenses, aeronautical ground stations, and radio telephone operator's privileges and limitations. Prerequisite: AVT 317.

AVT327 - Aircraft Communication 327-5 Aircraft Communication, Navigation and Pulse Systems. This course will introduce the student to the theory of operation of communication transceivers, navigation receivers, the Air Traffic Control Radar Beacon System (ATCRBS) and Distance Measuring Equipment (DME). Student will be introduced to performance testing and trouble analysis techniques using test equipment. Lecture four hours, laboratory two hours. Prerequisite: AVT 310. Course fee: \$25.

AVT329 - Intro to Avionics Systems 329-3 Introduction to Avionics Systems. This distance learning course is designed to introduce students to aircraft avionics systems. Starting with the history of avionics to current and future systems. Students will review system theories and operational use of communications, navigation, GPS, satellite communications, weather, ADS-B, Next generation airways systems, flight management systems, pitot/static systems, autopilot theory and space flight systems.

AVT340 - Aircraft Inspection 340-6 Aircraft Inspection. Students will be able to perform an annual inspection of an aircraft, demonstrate knowledge of FAR's, AD's, classifying repairs and specific service problems; complete the required maintenance forms, records, and reports; and learn the effects of human factors in aircraft maintenance. Prerequisite: AVT 110, 112, 116, 203. Special approval needed from the advisor. Course fee: \$50.

AVT345 - Powerplant Inspection 345-6 Powerplant Inspection. Students will be able to perform periodic inspection of powerplants. They will demonstrate their knowledge of FAR and application of FAA AD's, Service Bulletins, and proper use of inspection equipment. They will use knowledge learned in the

powerplant curriculum to perform malfunction analysis of powerplant and related systems. Live equipment is used on a return to service basis. Prerequisite: AVT 214, 315, 316. Course fee: \$50.

AVT350 - Technical Subjects in AV-Tech 350-1 to 32 Technical Subjects in Aviation Technologies. In-depth competency, skill development and exploration of innovative techniques and procedures used in Aviation Technologies. Study of program approved topics or projects may include workshops, short courses, seminars, research or independent study. Special approval needed from the department.

AVT358 - AVT Adv Work Experience 358-1 to 12 Aviation Technologies Advanced Work Experience. Credit granted for prior aviation technologies or electronic related job skills, work experience, management worker relations and supervisory experience of progressively higher levels of responsibility. AVT 358 credit will be awarded for substantial experience in the industry. Credit will be established by program evaluation.

AVT370 - Relibilty Maint Fault Predict 370-3 Reliability, Maintainability, and Fault Prediction and Analysis. Students will develop an understanding of the concepts of reliability, maintainability and failure modes to a level which facilitates fault prediction and the analysis of logistical systems. The topics of logic symbols, fault tree analysis, statistical analysis, fault criticality and engineering for reliability and maintainability will be presented as these relate to the maintenance and logistical management of aerospace hardware. Prerequisite: MATH 108 or approved substitute.

AVT380 - Aerospce Supply Chain Logistics 380-3 Aerospace Supply Chain Logistics. This course is a study of the logistics of efficiently scheduling, producing, transporting, storing, and supplying components and hardware in the context of the aerospace industry. Students will learn to improve efficiencies in supply chain logistics as correlated with advancements in management information system technology in order to facilitate the delivery of the desired goods and services to the correct location at the proper time.

AVT390 - MIS for Aerospace Applications 390-3 Management Information Systems for Aerospace Applications. Provides an understanding of various types of Management Information Systems (MIS) currently used in Aerospace Support, focusing on the planning, implementation, and evaluation of these. Through this course, the student will become familiar with MIS applications relevant to aerospace product support activities, learn to evaluate the strengths and weaknesses of various systems designs, develop problem solving and critical thinking skills as apposite to logistics applications, and acquire knowledge of basic database management, design, and security. Prerequisite: AVT 370, 380 or concurrent enrollment, and Information Systems and Applied Technologies 229 or equivalent computer literacy. Course fee: \$20.

AVT405 - Flight Management Systems 405-3 Flight Management Systems. Using industry type computer instruction and flight simulation trainers, students will develop knowledge of the operation and management of autopilots, auto throttles, inertial reference systems, electronic instrument systems, and flight management computers on advanced technology aircraft. Not for graduate credit. Prerequisite: AVT 305; or AF 207A, B. Course fee: \$35.

AVT410 - Advanced Composites 410-3 Advanced Composites. Topics include the theory and application of advanced composite materials used in modern aircraft structures and engine components. Students will evaluate structures and implement various methods of repair and maintenance using both cold and heated application methods. Not for graduate credit. Prerequisite: AVT 110. Course fee: \$60.

AVT416 - Advanced Propulsion Systems 416-3 Advanced Propulsion Systems. A study of advanced turbine powerplants and their control systems. Students will demonstrate an understanding of the operation and construction of integrated composite engines and analyze digital control systems. Topics include the interfacing of powerplant controls and monitoring systems, aircraft electronic data bussing and indicating displays. Not for graduate credit. Prerequisite: AVT 316. Course fee: \$25.

AVT422 - Aviation Radar Systems 422-3 Aviation Radar Systems. Introduces the student to applications of airborne radar equipment, including weather detection and tracking. The student will gain an understanding of installation techniques, system performance specification, operational analysis and troubleshooting. Not for graduate credit. Prerequisite: AVT 317. Co-requisite: AVT 318.

AVT440 - Unmanned Aircraft Systems 440-3 Unmanned Aircraft Systems. The purpose of this course is to provide an overview of Unmanned Aircraft Systems (UAS). Topics that will be discussed include the history of UAS, regulations, specific implications related to industry and society, employment

opportunities, ethics, and the necessary basic components required to operate a UAS. In addition, the student will be provided opportunities for hands-on experience with UAS principles of flight and operation principles via simulation and other activities.

AVT465 - Digital Data Bussing 465-5 Digital Data Bussing and Electronic Flight Instrument Systems (EFIS). This course will introduce digital data bus systems, control protocols and exchange formats. Students will study electronic flight instrumentation systems, engine indication and alerting systems found on various general, business, and air transport category aircraft while becoming familiar with the use of integrated test equipment to evaluate, test, and troubleshoot software routines for digital information transfer. Students will interpret blueprints and schematic diagrams to construct complex digital data bus harnesses to aircraft specifications. Not for graduate credit. Co-requisite: AVT 318. Course fee: \$30.

AVT475 - Aero Lean Mfg and Maint 475-3 Aerospace Lean Manufacturing and Maintenance Practices. This course introduces current and future aerospace manufacturing and maintenance professionals to lean manufacturing and maintenance principles and management strategies. Course emphasis is placed on the practical application of lean practices in real-world aerospace manufacturing and maintenance production facilities. Focus includes the history of lean, a detailed study of the Toyota Production System, defining and eliminating production waste, continuous production improvement strategies, just in time production control, 5S workplace organization and an introduction to Six Sigma quality control principles.

AVT478 - Aircraft Business 478-3 Aircraft Business and Industry Financial Practices. This class introduces current and future aerospace manufacturing and maintenance professionals to aviation business and finance. This course covers business and economic theory as it applies to a wide range of aviation businesses. Topics of study include a survey of the aviation industry, the application of economic principles to industry forecasts, business finance, and aviation in a global marketplace.

AVT485 - Aerospace Maint Shop Ops 485-3 Aerospace Maintenance Shop Operations. This course will give the student an in depth sampling of professional practices used within aerospace maintenance facilities and how they pertain to ongoing day to day operations. The exploration will include perspectives from a general aviation maintenance shop, a corporate aviation maintenance shop, an aircraft manufacturer's shop and an airline maintenance shop. Topics may include but not limited to: OSHA safety standards, aircraft ground handling, lifting, storing, fueling, personnel training, manufacturing processes, record keeping, etc. No prerequisites required.

AVT488 - Aerospace Safety 488-3 Advanced Aerospace Safety Procedures. This course is an introduction to safety management systems that are becoming prevalent and required in the aviation industry. Topics will include the history of SMS, FAA guidelines pertaining to SMS, development and implementation of an SMS and the documentation and record keeping required.

Aviation Technologies Faculty

Bartlett, Donald R., Assistant Professor, M.S., Aviation Safety, Central Missouri State University, 2010.

Berentsen, Lowell W., Associate Professor, Emeritus, M.Ed., University of Idaho, 2003.

Burgener, Michael A., Associate Professor and Chair, M.B.A., The Citadel, Charleston, SC. 2001.

Harrison, Matthew W., Associate Professor, M.S.ED., Southern Illinois University Carbondale, 2008.

Mattingly, Daniel I., Associate Professor, M.S., Aeronautical Science, Embry-Riddle Aeronautical University, 2007.

Mitchell, Keven R., Associate Professor, M.S., Applied and Natural Sciences in Aviation and Space, Oklahoma State University, 2000.

Rodriguez, Charles L., Assistant Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1997.

Russell, Lewis G., Assistant Professor, Emeritus, M.S. ED., Southern Illinois University Carbondale, 1978.

Sullivan, Karen J., Associate Professor, M.S.ED., Southern Illinois University Carbondale, 2007.

Behavior Analysis and Therapy

The Bachelor of Science Program in Behavior Analysis and Therapy aims to prepare students to enter into careers in Behavior Analysis and Therapy. Students will be eligible for Bachelors-level positions as Assistant Behavior Analysts, among a variety of other positions, working in a diverse range of human service agencies with a number of clinical populations. Students will also be competitive applicants for any of the U.S.'s graduate programs in Behavior Analysis.

Program Goals:

1. Graduates will be coursework eligible for national credentialing as Assistant Behavior Analysts (BCaBA), an employment position recognized in the state of Illinois.
2. Graduates will be extremely competitive for positions of employment at human service agencies serving individuals with intercultural disability, autism, traumatic brain injury, the elderly, and other clinical populations.
3. Graduates of the program interested in pursuing advanced degrees will be competitive for entry into one of the many masters programs in behavior analysis nation-wide (including the one in the Rehabilitation Institute at SIUC, which is internationally recognized as the first graduate training program in the U.S., and is accredited by the Association of Behavior Analysis International).

Bachelor of Science Degree in Behavior Analysis and Therapy, College of Education and Human Services

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
Requirements for Major in Behavior Analysis and Therapy: Behavior Analysis and Therapy 200- and 300-Level:	6
BAT 200; BAT 312 BAT 400-Level:	30
BAT 406; BAT 430; BAT 433; BAT 440; BAT 441; BAT 445H; BAT 452; BAT 474; BAT 495 PSYC 100 and 200 Level	7
PSYC 102 (counted in UCC); PLB 211	3
PLB 115/ZOOL 115 (counted in UCC) Required Credits (48 minimum requirement)	49
Electives by Advisement: (6 hrs @ 300-400 level)	36
Total	120

Behavior Analysis and Therapy Courses

BAT200 - Skeptical Thinking 200-3 Skeptical Thinking. This class will introduce students to common errors in thinking about many myths in society today. Students will be introduced to scientific thinking, and will learn to apply it to the study of everyday curiosities in the world around them. Students will also be introduced to the distinction between science, pseudoscience, and anti-science, particularly as it relates to the treatment of a variety of behavioral disorders.

BAT312 - Applied Behavior Analysis I 312-3 Applied Behavior Analysis I. This course will provide students with an introduction to the principles of the science of behavior known as behavior analysis. The philosophical system known as behaviorism that underlies this area of study will be explored, as will the application of behavioral principles to a number of areas of social life.

BAT406 - Applied Behavior Analysis II 406-3 Applied Behavior Analysis II. This course is an advanced survey of basic and applied research related to the principles and procedures in behavior analysis. As the second part of the ABA courses, this course serves to extend student's understanding of the principles of respondent and operant conditioning through exposure to basic research and demonstrations of interventions across diverse populations and settings. Prerequisite: REHB 312 with a minimum grade of C.

BAT430 - Behavior Therapy 430-3 Behavior Therapy. This course will trace the history of behavior therapy from early days where aversive and punishment procedures were instated to modern day positive-based interventions. Various therapeutic approaches will be covered including behavioral relaxation training, functional analytic psychotherapy, acceptance therapy and positive/mindful therapies. Prerequisite: BAT 312, BAT 406 with minimum grades of C.

BAT433 - Appl Beh Analysis Peds Populn 433-3 Applied Behavior Analysis with Pediatric Populations. This course provides students with knowledge related to the application of behavior analytic approaches to assessment and treatment of many childhood behavior problems. Topics covered will include assessment and treatment of problem behavior exhibited in school and home settings displayed by typically-functioning individuals, as well as individuals with a variety of developmental disorders. Prerequisite: BAT 312, BAT 406.

BAT440 - Ethics in BAT 440-3 Ethics in Behavior Analysis & Therapy. This course focuses on ethical conduct within the field of behavior analysis, and emphasizes problem-solving strategies to assist practitioners in resolving ethical dilemmas that may come about in the delivery of behavioral services. The course will provide an interpretation of the Behavior Analyst Certification Board guidelines for ethical conduct.

BAT441 - Assessment & Measurement 441-3 Assessment & Measurement. This course will provide an overview of behavioral observation methods, including approaches for monitoring and recording behavior over the course of behavior analytic services. Issues of reliability and validity will also be examined. Prerequisite: BAT 312.

BAT445H - Autism/Intellect Disabilities 445H-3 Autism and Intellectual Disabilities. This class introduces students to the variety of intellectual disabilities found within our society. Topics will range from how genetic mutations can result in life long disabilities, as well as how unknown factors produce disorders such as autism. Students will learn about diagnoses, assessment and treatment for a variety of disorders and how to manage such disabilities throughout the lifespan.

BAT452 - Behavior Analytic Appr to ISP 452-3 Behavior Analytic Approaches to Individualized Service Planning. This course provides students with the skills to develop and evaluate service plans for individuals receiving community education, rehabilitation, and other services from a behavior analytic perspective. Topics covered include person-centered assessment, functional community based training, individualized assessment, and written treatment plans. Prerequisite: BAT 312; BAT 406 with minimum grades of C.

BAT474 - Performance Management 474-3 Performance Management. This course focuses on the application of behavior analysis within organizations. Using the principles of behavioral science, students will learn how to manage employee behavior, develop organizational goals and objectives, track performance of work teams, and provide objective measures of compensation. Topics will include program evaluation, motivation, performance reviews, and emerging trends in organizational design. Prerequisite: BAT 312; BAT 406 with minimum grades of C.

BAT493 - Single-Case Research Methods 493-3 Single-Case Research Methodology. This course will provide students with the skills necessary to act as critical consumers of intervention research. It will also provide students with the analytical skills necessary to apply the logic of single-case research methodology to their work with the consumer. Emphasized will be the critique and interpretation of

published research, as well as the writing competencies required for a student to successfully prepare a research paper. Prerequisite: BAT 312 and simultaneous enrollment in or prior completion of BAT 406.

BAT495 - Practicum 495-3 Practicum. Application of behavioral analytic principles to clinical settings, cooperatively guided by Behavior Analysis and Therapy program faculty and human service agency staff. Prerequisite: BAT 312, BAT 406, BAT 440 with minimum grades of C.

BAT503 - Basic Behavior Analysis 503-3 Basic Behavior Analysis. Philosophy, terminology, and basic methodology of experimental and applied behavior analysis. Focuses on a variety of operant and respondent conditioning procedures for shaping new behaviors and modifying established behaviors. Special approval needed from the instructor.

BAT505 - Behavioral Gerontology 505-3 Behavioral Gerontology. This course examines the application of behavioral principles to problems associated with aging such as deficits in the activities of daily living and social skills, wandering, aggression, incontinence, depression and anxiety, and dementia among others. Environmental redesign and alternative performance strategies will also be addressed. Behavioral training and supervision of staff members who work with older individuals is also presented. Special approval needed from the instructor.

BAT507 - Behavior Consult & Management 507-3 Behavior Consultation and Management. Focus on the behavior analysis techniques needed for use in organizational and consultation settings. The fundamentals for developing effective consulting relationships are presented. Skills for becoming a behavior analytic consultant in clinical settings such as schools, developmental disability facilities, and managed care environments are presented. Additional behavior analytic consultant skills will be taught for effective practice of organizational behavior management in business and industry settings. Prerequisite: BAT 503.

BAT508 - Complex Behavior Analysis 508-3 Complex Behavior Analysis. Experimental analysis of procedures that result in acquisition, maintenance, and attenuation of complex individual and social behavior. Special approval needed from the instructor.

BAT509A - Single Subj Exp Designs 509A-3 Behavior Analysis Research Designs-Single Subject Experimental Designs. Focuses on behavior analysis research design and methodology. Three semester hours will be granted for each unit. Special approval needed from the instructor.

BAT509B - Group Experimental Designs 509B-3 Behavior Analysis Research Designs-Group Experimental Designs. Focuses on behavior analysis research design and methodology. Three semester hours will be granted for each unit. Special approval needed from the instructor.

BAT511 - Functional Analysis-Autism 511-3 Functional Analysis and Interventions-Autism. This course will survey research on the assessment and treatment of challenging behavior for individuals with autism. Defining characteristic, procedural variations, and strengths and limitations of the three general approaches to functional assessment will be reviewed. In addition, emphasis will be placed on strategies for using functional assessment information in the design of interventions to reduce challenging behavior. Prerequisite: BAT 503 or consent of instructor.

BAT512 - Legal and Ethical Issues 512-3 Legal and Ethical Issues in Behavior Analysis. Focuses on federal and state legislation, litigation, policies, guidelines, and other forms of legal and ethical control of the professional practice of behavior analysis and therapy. Implications for research and service will be discussed. Special approval needed from the instructor.

BAT515 - Apps to Medical Problems 515-3 Behavioral Applications to Medical Problems. Examines the use of behavior change procedures and applied behavior analysis in the treatment and rehabilitation of medically related problems such as obesity, alcoholism, headaches, hypertension and cerebral palsy; also, compliance to medical regimens, e.g., diabetes, dental hygiene, exercise; and promotes the utilization of health facilities and community health programs. Issues in training medical personnel to disseminate behavior change programs are also covered. Prerequisite: BAT 503 or consent of instructor.

BAT535 - Behavioral Observation Methods 535-3 Behavioral Observation Methods. Behavioral targeting, observational recording techniques, and issues of validity and reliability of measurement

relevant to rehabilitation will be examined. Prerequisite: previous or concurrent enrollment in either BAT 452 or BAT 503 or consent of instructor.

BAT543 - Child Behavior 543-3 Child Behavior. A systematic analysis of child behavior. Included is an examination of popular books on child rearing. Emphasizes approaches for remediation of behavior disorders. Special approval needed from the instructor.

BAT545 - Behavior in Dev Disabilities 545-3 Behavior Analysis in Developmental Disabilities. Consideration of behavioral principles as applied in the development of responsive behavior in persons with developmental disabilities. Special approval needed from the instructor.

BAT557A - Self Regulation: Self-Control 557A-3 Self-Regulation of Behavior: Self-Control. The course provides a thorough review of self-control techniques and their application to habit disorders such as smoking, eating, exercise, time-management and nervous habits. Special approval needed from the instructor.

BAT557B - Self-Regulation: Biofeedback 557B-3 Self-Regulation of Behavior: Biofeedback. The course provides a comprehensive review of experimental and clinical studies of biofeedback. It concentrates on stress related disorders and provides supervised laboratory experience. Special approval needed from the instructor.

BAT563 - Community Applications 563-3 Behavioral Analysis: Community Applications. All aspects of behavior analysis applications in the community are examined including historical development, the "state of the art", practical issues and obstacles to conducting behavioral analysis/community research; future trends and directions. Prerequisite: BAT 503 or consent of instructor.

BAT567 - Behavioral Theories-Addiction 567-3 Behavioral Theories of Addiction. Focus on the behavior analysis techniques needed for use in the diagnosis and treatment of various addictions. The fundamentals of scientific behavioral research in addiction are presented along with current effective treatment strategies that promote behavior change. Skills will be developed for becoming a behavior analytic addiction researcher or treatment provider in clinical settings serving persons with gambling and other addictions.

BAT574 - Staff Training & Development 574-3 Staff Training and Development. This course prepares the student to design, implement, and supervise an institutional program to train staff in methods of direct service to the institution's clients. Each student will actually design and submit a program through simulation. Lecture/workshop format.

BAT575 - Applications of BA 575-3 Practical Applications of Behavior Analysis. This course teaches students to identify, employ, and evaluate behavior analytic procedures in applied settings. Additional skills emphasized are those which enable students to communicate effectively with others involved in treatment planning and implementation. Lecture/workshop format.

BAT584 - Seminar in BAT 584-1 to 6 (1 to 3 per semester) Seminar in Behavior Analysis and Therapy. Special topics and new developments in modifying human behavior. Special approval needed from the instructor.

BAT591 - Independent Projects in BAT 591-1 to 18 Independent Projects in Behavior Analysis and Therapy. Systematic readings and development of individual projects in pertinent behavior analysis areas. No more than six hours may be counted toward the Master's degree. Special approval needed from the instructor.

BAT593 - Research in BAT 593-1 to 18 Research in Behavior Analysis and Therapy. Systematic investigation of factors and procedures relevant to behavior analysis. No more than six hours may be counted toward the Master's degree. Special approval needed from the instructor.

BAT594 - Practicum in BAT 594-1 to 12 Practicum in Behavior Analysis and Therapy. Supervised experiences in behavior analysis and therapy. Application of behavioral analysis/methods in human treatment and in management. Restricted to admission to the specific degree program.

BAT595 - Internship in BAT 595-1 to 12 Internship in Behavior Analysis and Therapy. Extended practice in Behavior Analysis settings cooperatively guided and supervised by agency staff and university faculty.

Graded S/U only. Prerequisite: BAT 594 with a grade of B or better. Special approval needed from the department.

BAT599 - Thesis 599-1 to 6 Thesis. Special approval needed from the instructor.

BAT601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Biochemistry

Biochemistry (BCHM) courses at the advanced undergraduate level are offered by the Department of Biochemistry and Molecular Biology. Faculty members of the Biochemistry and Molecular Biology department are also involved in School of Medicine programs, the Physician Assistant program and graduate program in Molecular Biology, Microbiology and Biochemistry (MBMB).

Biochemistry Courses

BCHM451A - Biochemistry 451A-3 Biochemistry. (Same as CHEM 451A and MBMB 451A) First half of the 451A,B two semester course. Must be taken in A,B sequence. Three lectures per week. Introduction to biomolecules, biochemical techniques, expression of genetic information, basic thermodynamics, ligand binding, aqueous solutions, protein structure, hemoglobin, spectroscopy. Prerequisites: CHEM 340 and CHEM 342 or 442, or equivalents.

BCHM451B - Biochemistry 451B-3 Biochemistry. (Same as CHEM 451B and MBMB 451B) Second half of 451A,B two semester course. Must be taken in A,B sequence. Basic kinetics, enzyme kinetics, enzyme inhibitors, regulation of enzymes, oxidation-reduction, high energy bonds, transport across membranes, intermediary metabolism, hormonal control of metabolism. Prerequisites: MBMB 451A or BCHM 451A or CHEM 451A or equivalent.

BCHM456 - Biophysical Chemistry 456-3 Biophysical Chemistry. (Same as CHEM 456 and MBMB 456) A one-semester course in Biophysical Chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics and spectroscopy applied to biological systems. Prerequisites: CHEM 340 and CHEM 342 or 442, MATH 141 or 150, MBMB 451A or BCHM 451A or CHEM 451A, or equivalents.

BCHM490 - Research Participation 490-1 to 3 Undergraduate Research Participation. Investigation of a problem, either individually or as a research group, under the direction of a member of the faculty. Not for graduate credit. Prerequisites: 3.0 grade point average in sciences courses. Special approval needed from the instructor.

BCHM451A - Biochemistry 451A-3 Biochemistry. (Same as CHEM 451A and MBMB 451A) First half of the 451A,B two semester course. Must be taken in A,B sequence. Three lectures per week. Introduction to biomolecules, biochemical techniques, expression of genetic information, basic thermodynamics, ligand binding, aqueous solutions, protein structure, hemoglobin, spectroscopy. Prerequisites: CHEM 340 and CHEM 342 or 442, or equivalents.

BCHM451B - Biochemistry 451B-3 Biochemistry. (Same as CHEM 451B and MBMB 451B) Second half of 451A,B two semester course. Must be taken in A,B sequence. Basic kinetics, enzyme kinetics, enzyme inhibitors, regulation of enzymes, oxidation-reduction, high energy bonds, transport across membranes,

intermediary metabolism, hormonal control of metabolism. Prerequisites: MBMB 451A or BCHM 451A or CHEM 451A or equivalent.

BCHM456 - Biophysical Chemistry 456-3 Biophysical Chemistry. (Same as CHEM 456 and MBMB 456) A one-semester course in Biophysical Chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics and spectroscopy applied to biological systems. Prerequisites: CHEM 340 and CHEM 342 or 442, MATH 141 or 150, MBMB 451A or BCHM 451A or CHEM 451A, or equivalents.

BCHM490 - Research Participation 490-1 to 3 Undergraduate Research Participation. Investigation of a problem, either individually or as a research group, under the direction of a member of the faculty. Not for graduate credit. Prerequisites: 3.0 grade point average in sciences courses. Special approval needed from the instructor.

Biological Sciences

Biological Sciences is an appropriate major for students wishing to pursue a career in secondary-school biology education, a pre-professional human-health curriculum, or an interdisciplinary program in ecology. Students in the major must choose one of these specializations to complete their degree. The Biological Sciences major provides interdepartmental, interdisciplinary training for specific career-paths in the life sciences. The curriculum is drawn from the resources of four life-science departments (Microbiology, Physiology, Plant Biology, and Zoology), each of which has its own undergraduate degree.

Students with a major in Biological Sciences may not select one of the four life-science areas as a minor, and students electing to pursue a double major may not use more than 11 semester hours of biological sciences courses to satisfy the requirements for both majors. In addition to biological sciences courses, students are required to take courses in physical sciences and mathematics.

Students planning a major in Biological Sciences should consult with the Director of Biological Sciences for program information and assignment to a home department for faculty mentoring. Students cannot repeat a major's course or its equivalent in which a grade of B or better was earned, without consent of the Director of Biological Sciences.

Bachelor of Science Degree in Biological Sciences, College of Education and Human Services

Biology Education Specialization - Biology Designation for the Illinois Secondary (6-12) Science Teaching License

This specialization prepares students for certification as secondary-school biology teachers. Course requirements match content areas specified by the Illinois State Board of Education for teacher licensure in science with a designation in biology.

Biology Education Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include MATH 109; BIOL 211-advanced UCC Group II Science; CHEM 200/201-advanced UCC Group I Science; PSYC 102-	41

Degree Requirements	Credit Hours
Social Science; EDUC 214-advanced UCC Social Science; EDUC 211-advanced UCC Multicultural; and PHIL 307I-UCC Humanities. ¹	
Biological Sciences Major Requirements ²	55-56
Life Science	
BIOL 211, BIOL 213 ³	5 (+3)
BIOL 304, BIOL 305, BIOL 306, BIOL 307	12
BIOL 202, HED 101, HND 101, KIN 101 or PHSL 201, PHSL 208 ⁴	2 (+2)
MICR 301; or PLB 300; or ZOOL 220	4-5
Six hours of 400-level electives in BIOL, MICR, PHSL, PLB, or ZOOL	3-4
BIOL 485, MICR 495, PHSL 490, PLB 480, or ZOOL 482	1
Mathematics and Statistics	
MATH 109 ⁵	(+3)
MATH 282 or PLB 360 or QUAN 402	3
Physical Science	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212 ⁶	7 (+3)
GEOL 220 and GEOL 223, or GEOL 221 and GEOL 224, or GEOL 222 and GEOL 223	4
PHYS 103, PHYS 203A, PHYS 203B, PHYS 253A, PHYS 253B	11
Professional Education Sequence	30
CI 360, CI 468	6
EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, EDUC 401A	24
Total	126-127

¹ ENGL 101 and ENGL 102 with a grade of C or better are required for admission to the Teacher Education Program. PHIL 307I should be taken to satisfy three hours of the Humanities requirement of

the University Core Curriculum. PSYC 102 is a prerequisite for EDUC 214 and should be taken to satisfy three hours of the Social Science requirement in the University Core Curriculum.

2 A minimum 2.75 grade point average in all Biological Sciences major courses is required.

3 Satisfies the Life Science (Group II) requirement of the University Core Curriculum. BIOL 211, BIOL 212, and BIOL 213 with grades of C or better are required for admission to the Teacher Education Program.

4 Satisfies the Human Health requirement of the University Core Curriculum.

5 Satisfies the Mathematics requirement of the University Core Curriculum.

6 Satisfies the Physical Science (Group I) requirement of the University Core Curriculum.

Bachelor of Science Degree in Biological Sciences, College of Science

Biomedical Science Specialization

Designed for Biological Sciences majors planning careers as biomedical researchers, chiropractors, dentists, medical doctors, optometrists, pharmacists, physical therapists, physician assistants, or podiatrists. Pre-professional students must register with the College of Science Pre-Health Professions Advisement Office.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Science Academic Requirements - Biological Sciences-completed with the Biological Sciences major Mathematics-completed with the Biological Sciences major Physical Sciences-completed with the Biological Sciences major Supportive Skills: CS 105 or CS 200B or CS 201 or CS 202; ENGL 290 or ENGL 291 or ENGL 391; or any two-semester sequence of a foreign language. ¹	6
Biological Sciences Major Requirements	70-72
BIOL 211, BIOL 212, BIOL 213 ²	9 (+3)
BIOL 305, BIOL 306, BIOL 409 ³	9
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212, CHEM 340, CHEM 341 ⁴	12(+3)
CHEM 442 and CHEM 443, or CHEM 350 and CHEM 351	5
MATH 108 and MATH 109, or MATH 111 or MATH 141 or MATH 150 ⁵	1-3(+3)
MATH 282 or QUAN 402 or PLB 360	3
MICR 301, MICR 302 ⁶	7

Degree Requirements	Credit Hours
BIOL 485 or MICR 495 or PHSL 490 or PLB 480 or ZOOL 482	1
PHSL 310	3(+2)
PHYS 203A, PHYS 203B, PHYS 253A, PHYS 253B	8
Twelve hours of life science electives chosen from the following: BIOL 304, MICR 403, MICR 421, MICR 425, MICR 441, MICR 453, MICR 460, MICR 470, MICR 477, MICR 480, MICR 481; PHSL 301, PHSL 320, PHSL 401A, PHSL 401B, PHSL 410A, PHSL 410B, PHSL 430, PHSL 433, PHSL 434, PHSL 450, PHSL 462, PHSL 470, PHSL 492; PLB 317, PLB 419, PLB 425, PLB 427, PLB 438, PLB 455, PLB 471, PLB 475; ZOOL 407, ZOOL 409, ZOOL 418, ZOOL 426, ZOOL 432, ZOOL 433, ZOOL 434, ZOOL 438, ZOOL 450, ZOOL 472	12
Electives ⁷	3-5
Total	120

1 Supportive skills courses are not required for students with three years of foreign language in high school, but computer science and technical writing courses are recommended.

2 Students must have a grade point averages of 2.0 or better in these biological science requirements. Satisfies the three-hour University Core Curriculum Group II Science requirement.

3 Students must have a grade point averages of 2.0 or better in these biological science requirements.

4 Satisfies the three-hour University Core Curriculum Group I Science requirement.

5 Satisfies the three-hour University Core Curriculum Mathematics requirement. Students should consult with the Pre-Health Professions Advisement Office about additional mathematics recommendations for particular programs.

6 Students must have a grade point averages of 2.0 or better in these biological science requirements.

7 Students are strongly encouraged to obtain research experience under the supervision of a faculty mentor. To prepare for an undergraduate research project, students should consider enrolling in UNIV 301A. Credit for research experience can be obtained by enrolling in MICR 490, PHSL 492, PLB 493A-C, or ZOOL 492.

Bachelor of Science Degree in Biological Sciences, College of Science

Ecology Specialization

Ecology is an important topic for students wishing to pursue careers in any aspect of the natural sciences, including environmental science, ecosystem management, teaching, and basic research. The track in ecology is also appropriate for students planning to pursue graduate studies in the natural sciences. Students pursuing the Ecology track can specialize in Environmental Studies by selecting the corresponding minor.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Science Academic Requirements - Biological Sciences-completed with the Biological Sciences major Mathematics-completed with the Biological Sciences major Physical Sciences-completed with the Biological Sciences major Supportive Skills: at least six credit hours chosen from CS 105 or CS 200B or CS 201 or CS 202; ENGL 290, ENGL 291 or ENGL 391; or any two semester sequence of a foreign language ¹	6
Biological Sciences Major Requirements	72
BIOL 211, BIOLO 212, BIOL 213 ²	9 (+3)
BIOL 304, BIOL 305, BIOL 307 ³	9
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212, CHEM 340, CHEM 341, CHEM 350 ⁴	15(+3)
MATH 141 ⁵	1(+3)
MATH 282 or PLB 360 or QUAN 402	3
MICR 301 ⁶	4
PHSL 310	3(+2)
PHYS 203A and PHYS 253A, or PHYS 205A and PHYS 255A	4
PLB 300	4
ZOOL 220	5
Life Science electives: At least seven hours of Microbiology, Plant Biology or Zoology 400-level courses, including one of: MICR 423, MICR 454, MICR 470, MICR 477; PHSL 433, PHSL 434; PLB 416, PLB 435, PLB 440, PLB 443, PLB 444, PLB 445, PLB 451, PLB 452; ZOOL 410, ZOOL 411, ZOOL 415, ZOOL 435, ZOOL 440, ZOOL 443, ZOOL 444, ZOOL 445, ZOOL 458, ZOOL 468, ZOOL 469, ZOOL 471, ZOOL 490	7
Ecology electives: at least five credits chosen from the following (including at least one lab course): ANTH 410K; FOR 331, FOR 402, FOR 406, FOR 415, FOR 452, FOR 454A-D; GEOG 439; GEOL 425, GEOL 428; PLB 303I, PLB 351; CSEM 240, CSEM 370, CSEM 441; ZOOL 351	5
MICR 490 or PLB 492 or PLB 493A or ZOOL 491 or ZOOL 492 or ZOOL 493 or ZOOL 496 or ZOOL 497	3

Degree Requirements	Credit Hours
Electives	3
Total	120

1 The supportive skills requirement may also be met by one of the following: (a) completing three years of one language in high school with a grade of C or better; or (b) earning eight credit hours of 100-level course in one language by proficiency examination.

2 Students must have a grade point average of 2.0 or better in these requirements for biological sciences. Satisfies the three-hour University Core Curriculum Group II Science requirement.

3 Satisfies the three-hour University Core Curriculum Group II Science requirement.

4 Satisfies the three-hour University Core Curriculum Group I Science requirement.

5 Satisfies the three-hour University Core Curriculum Mathematics requirement.

6 Students must have a grade point average of 2.0 or better in these requirements for biological sciences.

Biological Sciences Minor

A minor in Biological Sciences consists of a minimum of 21 hours and must include BIOL 211, BIOL 212, BIOL 213 (12 hours), and nine hours of BIOL 304, BIOL 305, BIOL 306, BIOL 307, BIOL 409 or BIOL 415. A student with a major in one of the four life sciences may not take a minor in Biological Sciences. Program must approve all minors.

Certificate Program in Histotechnology

See Histotechnology.

Biological Sciences Courses

BIOL202 - Human Genetics & Health 202-2 Human Genetics and Human Health. (University Core Curriculum) Acquaints the student with the role played by genetic information in human development and disease. Discussion topics will include genetics and human diversity, the interaction of genetic information and the environment, the concept of genetic disease, the mechanisms and ethics of gene therapy, and the possibilities of manipulating the genetic material.

BIOL211 - Intro Cell Biology & Genetics 211-4 Introductory Cell Biology and Genetics. [IAI Course: BIO 910] (Advanced University Core Curriculum course) Introductory biology for life science majors covering core topics in biological chemistry, cell structure and function, genetics, and development. Two lectures, one workshop, and one laboratory per week. Restricted to majors in Animal Science, Biological Sciences, Chemistry, Forestry, Microbiology, Physiology, Plant Biology, Zoology, pre-dentistry, pre-medicine, pre-optometry, pre-physician assistant, pre-physical therapy, pre-podiatry, pre-veterinary medicine. Lab/workshop fee: \$55.

BIOL212 - Intro Evolution and Ecology 212-4 Introductory Evolution and Ecology. [IAI Course: BIO 910] (Advanced University Core Curriculum course) Introductory biology for life science majors covering foundational topics in evolutionary patterns and processes, biological diversity, and ecology. Two lectures, one workshop, and one laboratory per week. Restricted to majors in Animal Science, Biological Sciences, Chemistry, Forestry, Microbiology, Physiology, Plant Biology, Zoology, pre-dentistry, pre-medicine, pre-optometry, pre-physician assistant, pre-physical therapy, pre-podiatry, pre-veterinary medicine. Lab/workshop fee: \$55.

BIOL213 - Intro Organismal Form Function 213-4 Introductory Organismal Form and Function. [IAI Course: BIO 910] (Advanced University Core Curriculum course) Introductory biology for life science

majors covering foundational topics in plant and animal anatomy and physiology. Two lectures, one workshop, and one laboratory per week. Restricted to majors in Animal Science, Biological Sciences, Chemistry, Forestry, Microbiology, Physiology, Plant Biology, Zoology, pre-dentistry, pre-medicine, pre-optometry, pre-physician assistant, pre-physical therapy, pre-podiatry, pre-veterinary medicine. Lab/workshop fee: \$55.

BIOL304 - Evolution 304-3 Evolution. An introductory survey of evolutionary biology emphasizing basic principles, including historical development of evolutionary theory, the genetic mechanisms of evolution, the processes of adaptation and diversification, and the origin and history of major groups of organisms. Prerequisites: BIOL 200A and BIOL 200B; or BIOL 211 and BIOL 212 with grades of C or better.

BIOL305 - Principles of Genetics 305-3 Principles of Genetics. Principles of genetics including Mendelism, chromosome behavior, genetic mapping, mutation and allelism, replication, transcription, translation, gene function and regulation, polygenic systems, population genetics and evolution, and genetic applications. Prerequisite: BIOL 200A or BIOL 211; BIOL 200B or BIOL 212 or BIOL 213; CHEM 140A or CHEM 200 or CHEM 200H and CHEM 201; with grades of C or better.

BIOL306 - Cell Biology 306-3 Cell Biology. The basic functions of the cell are considered. The biochemical basis and mechanisms of cellular processes, functions of the subcellular structures, and their ramifications will be explored in the context of plant and animal cells. Prerequisites: BIOL 200A or BIOL 211; BIOL 200B or BIOL 212 or BIOL 213; CHEM 140A or CHEM 200 or CHEM 200H and CHEM 201; with grades of C or better.

BIOL307 - Principles of Ecology 307-3 Principles of Ecology. Introduction to the study of interactions between organisms and their environment at the organismal, population, community, and ecosystem levels. Includes discussion of global ecology, biodiversity, and conservation. Prerequisites: BIOL 200A and BIOL 200B, or BIOL 212 and BIOL 213, or PLB 200; CHEM 140A or CHEM 200 or CHEM 200H, and CHEM 201; MATH 108; with grades of C or better.

BIOL409 - Developmental Biology 409-3 Developmental Biology. Basic principles and processes of embryonic development including contemporary research on molecular, cellular and genetic mechanisms of differentiation and morphogenesis; selected plants and invertebrate and vertebrate animals will be considered. Prerequisite: BIOL 305 with a grade of C or better.

BIOL415 - History of Biology 415-2 History of Biology. An historical overview of the development of biological knowledge. Prerequisites: BIOL 200A and BIOL 200B, or BIOL 211 and BIOL 212, or BIOL 211 and BIOL 213, or BIOL 212 and BIOL 213 with grades of C or better.

BIOL485 - Senior Seminar Biomedical Sci 485-1 Senior Seminar in Biomedical Science. Readings, writings, presentations, and discussions of current topics in biomedical science. One hour per week. Not for graduate credit. Restricted to senior standing in Biological Sciences.

BIOL500 - Contemporary Biology Teachers 500-3 Contemporary Biology for Teachers. An introduction to fundamental biological concepts. Emphasis is placed on exploring plant and animal model systems using contemporary methodologies. Examples of biological processes will be covered from genomics to ecosystems. Prepares teachers to introduce biological principles and innovative approaches to understanding biological systems in the classroom. Prerequisite: SCI 210A & B or equivalent.

BIOL601 - Continuing Enrollment 601-1 Continuing Enrollment. For students who have not finished their degree programs and who are in the process of working on their dissertations, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any course is not permissible. Graded S/U. Prerequisite: minimum hours as stated above.

Biological Sciences Faculty

Business

Business Courses

BUS101 - Open For Business 101-2 Open For Business. This introductory seminar supports the transition of students as they enter the SIU College of Business to help ensure their academic and professional success. It introduces students to the business world and explores the variety of career opportunities available to business graduates; it familiarizes students with the SIU College of Business, its departments, its student resources and support services; and it focuses on developing students' professional and career knowledge, skills, and abilities critical to achieving success in today's competitive business environment. Restrictions: College of Business majors; or approval of Associate Dean required.

BUS115 - Entrepreneur Opportunity 115-1 to 3 Creating Entrepreneurial Opportunities. This course offers high school students college credit for participation in approved high school CEO programs. Students are given an overview of entrepreneurial business development and management in a project-based experiential learning environment in which they write business plans and start, fund, and operate their own businesses. Enrollment restricted to students participating in College of Business-approved high school "CEO: Creating Entrepreneurial Opportunities" programs.

BUS202 - Business Career Transitions 202-2 Business Career Transitions. Designed to prepare business students to make a successful transition from the academic community to the business and professional world. Topics include career strategy, proactive job search campaign, and types of challenges in the work world. Features alumni and guest speakers, videos, case studies, discussion seminars. MGMT 202 strongly recommended before taking this course. Restriction: College of Business majors, sophomore standing or higher; or department approval required.

BUS259 - Intern-Work Experience 259-1 to 6 Intern-Work Experience. Current practical experience in business or other work directly related to coursework in a College of Business program and/or to the student's educational objectives may be used as a basis for granting credit in the college. Credit is given when specific program credit cannot be granted and may only be used for free elective or general elective credit. Credit is sought by petition and must be approved by the dean before registration. Mandatory Pass/Fail. Restriction: students with at least twelve hours with a 2.5 grade point average. Special approval needed from the department.

BUS288 - Study Abroad-Business 288-1-30 Study Abroad-Business. Provides lower-division credit toward the undergraduate degree for study at accredited and approved foreign institutions. Final determination of credit is made on the student's completion of work. One to fifteen hours per semester; one to nine hours for summer. Prior approval of College of Business.

BUS291 - Individual Study 291-1 to 6 Individual Study. Supervised work that relates to the student's academic programs and career objectives. Enrollment provides access to resources of the entire college. Each student will work under the supervision of a sponsoring staff member. May only be used for free or general elective credit. Credit is sought by petition and must be approved by the associate dean before registration. Restriction: College of Business major. Special approval needed from the department.

BUS388 - Study Abroad-Business 388-1-36 Study Abroad-Business. Provides upper-division credit toward the undergraduate degree for study at accredited and approved foreign institutions. Final determination of credit is made on the student's completion of work. One to eighteen hours per semester; one to nine hours for summer. Prior approval of College of Business; restricted to junior standing.

BUS495 - Internship in Business 495-3 Internship in Business. Supervised work experience that relates to the student's academic program and career objectives. Mandatory Pass/Fail only. Not for graduate credit. Only three semester hours may be applied toward the degree. Restrictions: Business majors, junior standing or higher. Approval needed from the student's department and the Business Placement Center.

Business and Administration

The Bachelor of Science degree program with a major in Business and Administration is an online degree program intended for those students residing outside the Carbondale community or who have work and/or family commitments that make traditional campus attendance impractical. The degree is intended to provide students with a broad exposure to critical business principles and a thorough understanding of functional units within an organization and the critical organizational decisions necessary in today's global business environment. Students enrolled in the online Business & Administration (BNAD) program are not allowed to concurrently take residential courses on campus that count toward this or another degree, without Associate Dean approval. Students enrolled in a residential degree program at SIU are not allowed to take courses in the online Business & Administration program, except in the specific case in which a student's graduation would be delayed because of a University-imposed time conflict between two required courses and when no other residential course option is available to fulfill that requirement - in these cases, director of undergraduate online programs review and Associate Dean approval is required for all exceptions. Program courses are designated by 940 section numbers. Students enrolled in the online BNAD program can choose to switch enrollment from the online program to being fully enrolled in an on-campus degree program, assuming all requirements are met, but the student may only switch between programs once. Likewise, students enrolled in the residential on-campus degree program can switch to be fully enrolled in the online BNAD program, but may only switch between programs once. A student who changes enrollment between the online BNAD degree program and a residential program once may not be allowed to return to their original degree program in the a future semester. BNAD is not offered as a residential program.

Students must meet the following conditions for acceptance into the program:

- Completed 26 semester hours of transfer work with 2.0 GPA, or higher, **and**
- Completed (or in process to complete prior to program start) transfer course work for UCC/IAI core or Associate in Arts or Associate Science, **and**
- Completed (or in process to complete prior to program start) course equivalents for ACCT 220, ACCT 230, and ACCT/FIN/MGMT 208, CMST 101, ECON 240 and ECON 241, ENGL 101, ENGL 102, MATH 139, MATH 140, PSYC 102 or SOC108; or consent of the College of Business.

A major in Business & Administration requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of those courses taken to satisfy the requirements for the Business & Administration major, and students must earn a minimum 2.0 grade point average for those major courses.

Students enrolled in the online Business and Administration degree cannot be concurrently enrolled to complete a dual degree with any other College of Business degree.

The Capstone Option for Transfer Students

The Capstone Option is available to students who have earned an Associate in Applied Science (AAS) or equivalent certification in approved business area degree and who have a cumulative 2.0/4.0 GPA on all accredited coursework prior to the completion of the AAS, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. See the Capstone Section of this catalog for more information on this option. Students who apply for Capstone will work with the College of Business Advisement Office for approval of the Capstone Option and will complete a personal contract for a degree completion plan.

Differential Tuition

The College of Business assesses College of Business majors a differential tuition surcharge of 15% of applicable tuition for declared College of Business majors. The College of Business has a "minor program fee" for other than College of Business majors that is equal to 15% of 15 credit hours of applicable tuition for declared College of Business minors.

Bachelor of Science Degree in Business and Administration (online)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Professional Business Core Prerequisites	16
Accounting (ACCT 220, ACCT 230)	6
Business Statistics (ACCT/FIN/MGMT 208)	3
Economics (ECON 241, ECON 240)	(3)+3
Mathematics (MATH 139 and MATH 140)	(3)+4
Requirements for online Major in Business and Administration. Minimum grade of C required for all classes in major area (a grade of C- is not sufficient): (FIN 270, FIN 330, FIN 331, FIN 350; MGMT 202, MGMT 304, MGMT 318, MGMT 341, MGMT 345, MGMT 350, MGMT 380, MGMT 385, MGMT 446, MGMT 481; MKTG 304, MKTG 305, MKTG 336, MKTG 363, MKTG 435, MKTG 463)	60
Electives	5
Total	120

Business and Administration Minor

A minor in Business and Administration consists of a minimum of 15 semester hours, including Accounting 220, 230, Finance 330, Management 304 and Marketing 304. All prerequisites for these classes must also be satisfied, including ACCT/FIN/MGMT 208, ECON 240, MATH 139, and MATH 140. At least nine of the fifteen semester hours must be taken at Southern Illinois University Carbondale. An advisor within the College of Business must be consulted before selecting this field as a minor.

A minor from the College of Business requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for their minor, and students must earn a minimum 2.0 grade point average for those minor courses. A minor in Business and Administration is restricted to majors outside the College of Business.

Business Economics

The Business Economics major offered through the College of Business emphasizes the application of economic concepts and the use of critical analysis to the solution of economic and managerial problems. This undergraduate program is an excellent general preparation for future managerial and staff assignments in a variety of business and public organizations. The program also prepares students for graduate study in economics as well as for the Master of Business Administration (MBA) degree. Those students who desire professional careers as business and managerial economists are advised to plan to complete one to four years of postgraduate study. A major in Business Economics requires students to earn a minimum grade of C in each of the courses taken to satisfy the requirements for the Business

Economics major*(as described below), and students must earn a minimum 2.0 grade point average for those major courses.

The Capstone Option for Transfer Students

The Capstone Option is available to students who have earned an Associate in Applied Science (AAS) or equivalent certification in approved business area degree and who have a cumulative 2.0/4.0 GPA on all accredited coursework prior to the completion of the AAS, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 41 to 30 hours, therefore reducing the time to degree completion. Students who apply for Capstone will work with the College of Business Advisement Office for approval of the Capstone Option and will complete a personal contract for a degree completion plan.

Differential Tuition

The College of Business assesses College of Business majors a differential tuition surcharge of 15% of applicable tuition for declared College of Business majors. The College of Business has a “minor program fee” for other than College of Business majors that is equal to 15% of 15 credit hours of applicable tuition for declared College of Business minors.

Bachelor of Science Degree in Business Economics, College of Business

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Professional Business Core	47
Requirements for Major in Business Economics	21
Minimum grade of C required for all classes in major area. ECON 340, ECON 341	6
FIN 361 and FIN 462 or FIN 463	6
Three courses from the following list, two of which must be in economics: ECON 310, ECON 315, ECON 329, ECON 330, ECON 350, ECON 416, ECON 429, ECON 443, ECON 463, ECON 465, ACCT 321, ACCT 331, ACCT 471, FIN 331, FIN 464, MGMT 352, MKTG 390, MKTG 435	9
Electives ¹	13
Total	120

¹ 120 semester hours are required for graduation. Any additional hours of college level credit can be used to equal minimum 120 semester hours required for degree.

Chemistry and Biochemistry

Chemistry is an excellent foundation for any scientific, professional or business career, including but not limited to agricultural chemistry, analytical chemistry, biochemistry, chemical engineering, dentistry, ecology and environmental chemistry, forensic science, geochemistry, management and marketing, materials science, medicine, optometry and ophthalmology, patent law, pharmacology, physical chemistry, plastics and polymer chemistry, renewable energy, synthetic organic chemistry, toxicology or veterinary science. Undergraduate research experiences are readily available under the supervision of a faculty advisor. Students are encouraged to meet with an undergraduate advisor to design a curriculum focused on their career goals.

All Chemistry majors begin in the Comprehensive Chemistry specialization, which provides a rigorous program with advanced study in analytical, organic and physical chemistry for the professional chemist. After the freshman year, all students pursuing a Bachelor of Science degree in the College of Science have the option to continue in Comprehensive Chemistry or move into a more specialized specialization, which builds upon the foundation course work in analytical, biochemistry, inorganic, organic and physical chemistry.

Pre-professional students and those interested in biological chemistry may pursue the Biochemistry specialization with additional advanced courses in other life sciences. The Environmental Chemistry specialization complements advanced study in analytical and organic chemistry with in depth study of environmental chemistry and related fields of engineering, forestry, geology, plant biology and soil science. The Forensic Chemistry specialization gives students the opportunity to study the science required for investigative research in a crime lab. Although not required for graduate study or employment as a chemist, students are encouraged to pursue certification from the American Chemical Society, 1155 Sixteenth St. NW, Washington, D.C.

Future business leaders can earn a Bachelor of Arts degree in the College of Science. The Business specialization allows students to pursue a minor degree in Business and Administration and is ideal preparation for a career in the production, management, marketing and technology transfer aspects of the chemistry industry. Additional course work is recommended to prepare for a Masters in Business Administration.

All science majors require proficiency in mathematics, which is prerequisite for upper level course work in chemistry. Students are encouraged to enroll in the highest level of mathematics appropriate to their background within the first semester. All students are expected to show proficiency in chemistry prerequisites that are chemistry courses with a grade of C or better, or obtain consent of the instructor for enrollment in the subsequent chemistry course. For chemistry majors, a grade of C or better is needed in every Chemistry Introductory course and in every Chemistry Foundation course to be eligible for graduation. A minimum grade point average of 2.0 in chemistry course work is needed in order for a student to receive a degree in chemistry. A student cannot repeat a course or its equivalent in which a grade of B or better was earned without the consent of the department.

Students wishing more detailed information should visit our website at chem.siu.edu or contact an undergraduate advisor at the Department of Chemistry and Biochemistry, Neckers Hall, Rm. 224 - Mail Code 4409, Southern Illinois University Carbondale, Carbondale, IL 62901.

Bachelor of Science Degree in Chemistry, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
College of Science Academic Requirements	6
Biological Sciences - (3 hours included in the UCC Life Sciences hrs, and 3 hours completed with CHEM 350) Mathematics – completed with major Physical Sciences – completed with major Supportive Skills - CS 201 or CS	6

Degree Requirements	Credit Hours
202; ENGL 290 or ENGL 291 or ENGL 391; MATH 282 or MATH 483 ²	
Chemistry Major Requirements ³	62-64
CHEM 200 or CHEM 200H, CHEM 201, CHEM 202 or CHEM 202H, CHEM 210 or CHEM 210H, CHEM 211, CHEM 212 or CHEM 212H (3 hours included in the UCC Physical Science hours)	7
CHEM 330, CHEM 340, CHEM 341, CHEM 350, CHEM 351, CHEM 360, CHEM 361, CHEM 410, CHEM 411	24
MATH 150, MATH 250 (3 hours included in the UCC Mathematics hours)	5
MATH 221 or MATH 251 or MATH 305 or MATH 483	3-4
PHYS 205A, PHYS 255A, PHYS 205B, PHYS 255B	8
One of the following specializations:	
Biochemistry Specialization	16
CHEM 442, CHEM 443, CHEM 452, CHEM 453	10
Six hours from the following: BIOL 305, BIOL 306; CHEM 434, CHEM 444, CHEM 451 A/B in lieu of CHEM 350, CHEM 456, CHEM 460/CHEM 463; MICR 301, MICR 302, MICR 425, MICR 460; PHSL 310, PHSL 401A, PHSL 401B, PHSL 410A, PHSL 410B, PHSL 420A, PHSL 420B, PHSL 460; PLB 320, PLB 419, PLB 427; ZOOL 409, ZOOL 418	6
Comprehensive Chemistry	16
CHEM 434, CHEM 442, CHEM 443, CHEM 460, CHEM 461	13
One of the following: CHEM 431, CHEM 439, CHEM 444, CHEM 451 A&B in lieu of CHEM 350, CHEM 452, CHEM 456, CHEM 468, CHEM 479	3
Environmental Chemistry Specialization	15
CHEM 431, CHEM 434, CHEM 442, CHEM 443	12
MATH 483 (included in math hours above)	
At least 3 hours from the following: CE 310, CE 418; FOR 452/FOR 452L; GEOL 418, GEOL 421; ME 410, ME 416;	3

Degree Requirements	Credit Hours
MICR 423, MICR 425; CSEM 442, CSEM 446, CSEM 447/ CSEM 448; PLB 427; ZOOL 411, ZOOL 432	
Forensic Chemistry Specialization	15
CHEM 434, CHEM 439, CHEM 442, CHEM 443	12
MATH 483 (included in math hours above)	
PHIL 104 or PHIL 340 (3 hours included in UCC humanities)	
At least 3 hours from the following: BIOL 305; GEOL 310, GEOL 417; MICR 301, MICR 302, MICR 454, MICR 460; PHSL 310, PHSL 401A, PHSL 401B, PHSL 420A, PHSL 420B; PLB 330; ZOOL 409	3
American Chemical Society Certification	3
Certification by the ACS requires a minimum of 300 contact hours of undergraduate research over at least two semesters, including two credit hours of CHEM 396 or CHEM 496H; attending undergraduate seminar, CHEM 490; and completion of a comprehensive research report under the direction of a faculty advisor. A student can receive ACS Certification with any of the above specializations.	
Chemistry Honors	6
Participation in Chemistry Honors requires completion of the ACS Certificate with 300 contact hours of undergraduate research, including two credit hours of CHEM 496H; attending undergraduate seminar, CHEM 490H; and completion of an honors thesis, CHEM 499H or UHON 499, under the direction of a faculty advisor. A faculty advisor approved proposal for an honors research project should be submitted one year prior to the expected completion of an honors thesis. A student can earn Chemistry Honors with any of the above specializations.	
General Electives	11-13
Total	120

1 A total of nine hours of biological science, mathematics, and physical science course work are accounted for in the 39-hour University Core Curriculum requirement. An additional two hours of human health are accounted for if students choose PHSL 310 as part of the Biochemistry Specialization.

2 A total of three hours of biological sciences are completed with biological chemistry or biochemistry. CHEM 451A may substitute for CHEM 350, if a student continues with CHEM 451B. Prerequisite is MATH 106, MATH 111 or MATH 108 and MATH 109. The elective hours are decreased by three to six hours for students who place into a course lower than calculus. Three hours of supportive skills are accounted for in the College of Science requirement and elective hours may increase by two hours if students choose MATH 483.

3 Students must complete all of the additional courses listed under the specialization as well as any prerequisites not listed here for all additional courses. These courses may substitute for electives and may require more than 120 total credit hours if not chosen wisely and with guidance from advisors.

Bachelor of Arts Degree in Chemistry, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
College of Science Academic Requirements	6
Biological Sciences—(three hours included in the UCC Life Sciences hours, and three hours completed with CHEM 350) Mathematics – completed with major Physical Sciences – completed with major Supportive Skills: CS 201 or CS 202; ENGL 290 or ENGL 291 or ENGL 391; MATH 282 or MATH 483	6
Requirements for Major in Chemistry	62
CHEM 200 or CHEM 200H, CHEM 201, CHEM 202 or CHEM 202H, CHEM 210 or CHEM 210H, CHEM 211, CHEM 212 or CHEM 212H (3 hours included in the UCC Physical Science hrs)	7
CHEM 330, CHEM 340, CHEM 341, CHEM 350, CHEM 351, CHEM 360, CHEM 361, CHEM 410, CHEM 411	24
MATH 150, MATH 250 (3 hours included in the UCC Mathematics hrs)	5
PHYS 205A, PHYS 255A, PHYS 205B, PHYS 255B	8
Business Specialization	21-22
One of the following: CHEM 431, CHEM 434, CHEM 442, CHEM 452, CHEM 460	3-4
ACCT 220, ACCT 230	6
ECON 240	3
FIN 330	3
MGMT 304 or MGMT 318	3
MKTG 304	3
Free Electives	7-10
Total	120

¹ A total of nine hours of biological science, mathematics, and physical science course work are accounted for in the 41-hour University Core Curriculum requirement. An additional three hours of social science are accounted for if students take ECON 240 in the Business Specialization

Chemistry Minor

The minor in chemistry requires a minimum of 20 semester hours of chemistry in formal course work including CHEM 200, CHEM 201, CHEM 210, CHEM 211 and three elective lecture courses at 300-level or above. At least one of the elective courses must include a lab component. All elective courses must be taken at SIU. A grade of C or better is needed in all elective courses to be eligible for a minor in chemistry. Microbiology majors may take MICR 425 in place of CHEM 350 to meet the requirements for a minor in chemistry.

Forensic Science Minor

Required courses for the Forensic Science Minor amount to 15 hours, including nine hours of required courses and six hours of electives (with no more than four of the minimum six hours of electives from a single discipline/department).

Required Courses: nine hours: ANTH 231, CCJ 201, CHEM 173.

Electives: (note, some have prerequisites) six hours: AH 313; ANTH 240A, ANTH 440B, ANTH 441D, ANTH 455A, ANTH 455H, ANTH 465 (Internship in Forensics - must be arranged individually); BIOL 305; CCJ 290, CCJ 310, CCJ 330, CCJ 408; CHEM 439; PHIL 104, PHIL 340; PHSL 301; PLB 300, PLB 330; POLS 334; PSYC 305, PSYC 431, PSYC 440; SOC 372.

American Chemical Society Certificate

The American Chemical Society (ACS) Certificate program prepares students for a career in the chemical industry or for further studies in graduate school. The certificate indicates that a student has completed the rigorous academic requirements for a degree in chemistry and has actively participated in undergraduate research under the direction of a faculty research advisor. Students should contact a faculty research advisor at least one year prior to graduation to apply for an undergraduate research position in their laboratory. Students will complete 300 hours of undergraduate research including two credit hours of CHEM 396 or CHEM 496H; attend undergraduate seminar, CHEM 490; and complete a comprehensive research report for submission to the department. An application to receive an ACS Certificate must be submitted at least one month prior to graduation with verification by a faculty research advisor of completion of all requirements.

Chemistry Honors

All freshmen chemistry majors are strongly encouraged to enroll in CHEM 200H and to participate in the University Honors Program. The Chemistry Honors track includes completion of an ACS Certificate and an honors thesis under the supervision of a faculty research advisor. Applications for Chemistry Honors should be submitted at least one year prior to graduation and must include an honors research project proposal with a letter of support from a faculty research advisor. Acceptance and participation in an honors research project requires a 3.25 grade point average in all chemistry coursework. Students will complete 300 hours of undergraduate research including two credit hours of CHEM 496H; attend undergraduate seminar, CHEM 490H; complete an honors thesis, CHEM 499H; and present their thesis work as a seminar or poster presentation. The honors thesis and all chemistry honors courses may be included in the pursuit of an Honors Degree offered by the University Honors Program, which requires submission of an honors thesis project proposal to the Honors Program Director before the end of the junior year after approval from a faculty research advisor. The Honors Thesis course, University Honors 499, may substitute for CHEM 499H and requires submission of an honors thesis to the Honors Program Office and OpenSIUC.

Multiple Specializations in Chemistry

Students meeting the requirements for a Bachelor of Science degree in Chemistry may earn multiple specializations. All requirements for each specialization must be satisfied.

Transfer Credit

Credit for a course in chemistry successfully completed at another accredited institution will be accepted to meet major or minor requirements in chemistry at SIU, subject to the following conditions:

1. The course number must bear a departmental prefix clearly indicating the course is a chemistry (or biochemistry) course.
2. The course must have covered substantially the same material as a course currently offered at SIU to meet major requirements.
3. Any course used to meet major or minor requirements in chemistry must be explicitly approved by the Department of Chemistry and Biochemistry.

Chemistry and Biochemistry Courses

CHEM106 - Chemistry and Society 106-3 Chemistry and Society. (University Core Curriculum) [IAI Course: P1 903L] Exploration of the many implications that chemistry has upon modern society. Topics include air and water quality, global warming, acid rain, fossil, solar and nuclear fuels, nutrition and drugs. Three lectures per week except that every other week a three-hour lab is substituted for one of the lectures that week. Lab fee: \$60.

CHEM125 - Prep General Chemistry 125-3 Preparatory General Chemistry. Preparation for general chemistry (CHEM 200). This course is designed to strengthen background knowledge and skills necessary for success in CHEM 200. Topics include unit conversions, periodic table, chemical formulas, chemical reactions, and stoichiometry, with a focus on mathematical problem solving, interpreting data from graphs and tables, and chemical reasoning.

CHEM140A - Chemistry 140A-4 Chemistry. (Advanced University Core Curriculum) [IAI Course: P1 902L] A two-semester course of general, organic and biological chemistry designed to meet the needs of nursing, dental hygiene, physical therapy, other allied health programs, agriculture, forestry and other majors with comparable requirements. This course does not satisfy prerequisite requirements for other courses and is not applicable to a major in chemistry. CHEM 140A can serve as a preparation for CHEM 200 for students without a year of high school chemistry or for those who feel their background is inadequate. Three lectures and one three-hour laboratory per week. Pre- or Co-requisite: MATH 106, 108, 109, 110, 111, 125, 139, 140, 141 or 150. CHEM 140A satisfies University Core Curriculum Science Group I requirement in lieu of 106. Lab fee: \$60.

CHEM140B - Chemistry 140B-4 Chemistry. A two-semester course of general, organic and biological chemistry designed to meet the needs of nursing, dental hygiene, physical therapy, other allied health programs, agriculture, forestry and other majors with comparable requirements. This course does not satisfy prerequisites for other courses and is not applicable to a major in chemistry. Three lectures and one three-hour laboratory per week. Prerequisite: CHEM 140A. Pre- or Co-requisite: MATH 106, 108, 109, 110, 111, 125, 139, 140, 141 or 150. CHEM 140A satisfies University Core Curriculum Science Group I requirement in lieu of 106. Lab fee: \$60.

CHEM173 - Forensic Science 173-3 Introduction to Forensic Science. This course is designed to provide an introduction to forensic science and criminalistics and the techniques used in the modern forensic laboratory for the analysis of common types of physical evidence encountered at crime scenes. Topics include the recognition, identification, and evaluation of physical evidence such as DNA, hairs, fibers, drugs, blood, glass, soil, firearms, fingerprints, and documents. Three lectures per week. No prerequisite.

CHEM180 - Chemistry of Beer 180-2 The Chemistry of Beer and Brewing. The course covers the science and chemistry of beer and brewing. The history of beer and brewing will be introduced to follow the evolution of beer as a food and beverage, including how beer has impacted society and how brewing has been affected by society. The chemistry of the four basic ingredients of beer (water, malt, hops, and yeast) will be explored, as well as the chemistry of the brewing process. The various styles of beer will be introduced and discussed with respect to how the styles can be achieved based on the chemistry of the ingredients and process. Home brewing and commercial brewing will be compared. The course does not presume a background in chemistry and various chemical concepts will be introduced on an as needed basis.

CHEM181 - Chemistry of Beer Lab 181-1 The Chemistry of Beer and Brewing Laboratory. The laboratory complement to CHEM 180, The Chemistry of Beer and Brewing. The laboratory will cover various aspects of beer and brewing in a hands-on experiential environment. A major component will be guided tasting sessions of the various style categories of beer. Students will participate in brewing beer from base ingredients using various brewing techniques. Experiments conveying basic biology, chemistry and physical science concepts will be conducted. In addition, spectroscopic and chromatographic methods will be used to analyze flavor and ingredient components in beer. Special tours may also be arranged in regional breweries and hop yards. Students must be of legal drinking age prior to the first laboratory meeting. Special approval needed from the instructor. Lab fee: \$90.

CHEM200 - Intro to Chemical Principles 200-3 Introduction to Chemical Principles. (Advanced University Core Curriculum course) [IAI Course: CHM 911] [IAI Course: P1 902] First-semester chemistry for students in science, pre-professional, engineering or technology programs. Atomic structure, molecular structure, bonding, solutions, stoichiometry, gases, liquids and solids. Three lectures per week. Students are required to attend a weekly one hour supervised computer workshop. Prerequisite: one year of high school chemistry or CHEM 140A or ACT Science score of at least 22; Prerequisite or Co-requisite: MATH 106, 108, 109, 111, 140 or 150; Concurrent enrollment in CHEM 201 and CHEM 202. With 201 satisfies University Core Curriculum Science Group I requirement in lieu of 106.

CHEM200H - Atoms and Molecules 200H-3 Chemistry of Atoms and Molecules. First semester of the accelerated chemistry course for chemistry majors and advanced students in science. Atoms, quantum theory, atomic structure, chemical bonds, molecular structure, and chemical reactions. Three lectures per week. Students are required to attend a weekly one hour supervised computer workshop. Prerequisite: declared Chemistry major or ACT Science score of at least 25; Prerequisite or Co-requisite: MATH 106, 108, 109, 111 or 150. Concurrent enrollment in CHEM 201 and CHEM 202H. With 201 satisfies University Core Curriculum Science Group I requirement in lieu of 106.

CHEM201 - General Chemistry Lab I 201-1 General Chemistry Laboratory I. (Advanced University Core Curriculum course) [IAI Course: P1 902L] [IAI Course: CHM 911] Synthesis and exploration of the properties of compounds and elements. One three-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in Chemistry 200. If Chemistry 200 is dropped, the laboratory course must also be dropped. With Chemistry 200 satisfies University Core Curriculum Science Group I requirement in lieu of 106. Lab fee: \$60.

CHEM202 - Intro Chemistry Workshop 202-1 Introductory Chemistry Workshop. Supervised computer workshop meets one hour weekly for students in Introduction to Chemical Principles. Concurrent enrollment in CHEM 200.

CHEM202H - Atoms & Molecules Workshop 202H-1 Atoms and Molecules Workshop. Supervised computer workshop meets one hour weekly for students in Chemistry of Atoms and Molecules. Concurrent enrollment in CHEM 200H.

CHEM210 - General and Inorganic Chem 210-3 General and Inorganic Chemistry. [IAI Code: CHM 912] Second semester chemistry for science, engineering or pre-professional majors. Rates of reaction, chemical equilibrium, acid-base equilibria, pH electrochemistry, transition metals, properties of inorganic compounds, nuclear chemistry and organic chemistry. Three lectures per week. Students are required to attend a weekly one hour supervised computer workshop. Prerequisite: MATH 106, 108, 109, 111, 140 or 150; C or better in CHEM 200, 201. Concurrent enrollment in CHEM 212.

CHEM210H - Chemistry of Matter 210H-3 Chemistry of Matter. Second semester of the accelerated chemistry course for chemistry majors and advanced students in science. Chemical properties of matter,

kinetics, equilibrium, solution chemistry, thermodynamics, electrochemistry, nuclear chemistry and transition metals. Three lectures per week. Students are required to attend a weekly one hour supervised computer workshop. Prerequisite: MATH 106, 108, 109, 111 or 150; C or better in CHEM 200H or declared Chemistry major and A grade in CHEM 200; Concurrent enrollment in CHEM 211 and CHEM 212H.

CHEM211 - General Chemistry Lab II 211-1 General Chemistry Laboratory II. [IAI Code: CHM 912] Continued synthesis and exploration of properties of compounds and elements. Prerequisite: C or better in CHEM 200, 201; completion of or concurrent enrollment in CHEM 210. If CHEM 210 is dropped, CHEM 211 must also be dropped. Lab fee: \$60.

CHEM212 - General Chemistry Workshop 212-1 General Chemistry Workshop. Supervised computer workshop meets one hour weekly for students in General and Inorganic Chemistry. Concurrent enrollment in CHEM 210.

CHEM212H - Matter Workshop 212H-1 Matter Workshop. Supervised computer workshop meets one hour weekly for students in Chemistry of Matter. Concurrent enrollment in CHEM 210H.

CHEM296 - Introduction to Research 296-1 to 2 Introduction to Research. Introduction to research under the direction and supervision of a faculty advisor. Safety training is required. Special approval needed from the instructor.

CHEM330 - Quantitative Analysis 330-5 Quantitative Analysis. A one-semester course in analytical chemistry that emphasizes quantitation by wet-chemical methods and modern instrumentation. Topics include statistics, sampling, gravimetry, multiple chemical equilibria, titrimetry, potentiometry, voltammetry, spectrophotometry and chromatography. Three lectures and two laboratories per week. Ability to solve algebraic equations and use of logarithms essential. Prerequisite: MATH 109, 111, 150 or 250; C or better in CHEM 210, 211. Lab fee: \$60.

CHEM339 - Intro to Organic Chemistry 339-3 Introduction to Organic Chemistry. An introduction to the chemistry of carbon-based compounds. Intended to introduce students to functional groups; their structure properties and reactivity. For students requiring only one semester of organic chemistry. Three lectures per week. Prerequisite: C or better in CHEM 210, 211. Recommended: concurrent enrollment in CHEM 341.

CHEM340 - Organic Chemistry I 340-3 Organic Chemistry I. The first part of a two semester introduction to organic chemistry. This course will introduce basic nomenclature, bonding, stereochemistry, reactivity and the spectroscopic methods common to organic chemistry. Three lectures per week. Prerequisite: C or better in CHEM 210, 211.

CHEM341 - Organic Chemistry Lab I 341-2 Organic Chemistry Laboratory I. An introductory lab course based upon a problem-solving approach to organic chemistry. Students will identify and derivatize unknowns using modern organic techniques. One one-hour lecture and one four-hour laboratory per week. Prerequisite: C or better in CHEM 210, 211; 339 or 340 taken concurrently. Lab fee: \$60.

CHEM350 - Biological Chemistry 350-3 Introduction to Biological Chemistry. Fundamental concepts in Biological Chemistry include biomolecular structure, enzyme catalysis, metabolism and gene expression. Three lectures per week. Prerequisite: C or better in CHEM 210 and 339 or 340; C or better in one semester biological sciences course (not University Core Curriculum course). Offered spring semester only.

CHEM351 - Biochemistry Laboratory 351-2 Biochemistry Laboratory. A one semester biochemistry laboratory covering techniques and laboratory procedures; isolation, purification and characterization of amino acids, peptides, proteins, nucleic acids, lipids and cofactors; spectroscopic and chromatographic analysis of biomolecules; study of protein-ligand interactions; enzyme kinetics. One one-hour lecture and one four-hour laboratory per week. Prerequisites: CHEM 210, 211, 339 or 340, 341. Prerequisite or co-requisite: CHEM 350 or 451B. Offered spring semester. Lab fee: \$60.

CHEM360 - Physical Chemistry 360-3 Classical Physical Chemistry. An introduction to chemical, statistical thermodynamics and kinetics. Prerequisite: Mathematics 250; C or better in CHEM 210,

330 or concurrent enrollment. Mathematics 221 or 305 is recommended as prerequisite or concurrent enrollment. Offered fall semester only.

CHEM361 - Physical Chem Lab I 361-1 Physical Chemistry Laboratory I. Experiments relating to topics covered in 360. Prerequisite: CHEM 360 or concurrent enrollment. One three-hour laboratory per week. Offered fall semester only. Lab fee: \$60.

CHEM386A - Problem Solving Workshop 386A-1 Problem Solving Workshop. A two semester workshop sequence for chemistry majors. One two-hour workshop per week per semester. Introduction to problem solving strategies with examples and practice problems. Prerequisite: Chemistry 200. Restricted to chemistry major.

CHEM386B - Problem Solving Workshop 386B-1 Problem Solving Workshop. A two semester workshop sequence for chemistry majors. One two-hour workshop per week per semester. Advanced problem solving with general applications. Prerequisite: CHEM 386A.

CHEM396 - Undergraduate Research 396-1 to 2 Undergraduate Research. Research under the direction and supervision of a faculty advisor culminating in a written report. Safety training is required. Prerequisite: one semester of chemistry with laboratory experience. Special approval needed from the instructor.

CHEM410 - Inorganic Lab 410-2 Inorganic Synthesis and Characterization Laboratory. Introduction to synthesis techniques and characterization methods of inorganic compounds. One four-hour lab per week. Not for graduate credit. Prerequisite: completion of or concurrent enrollment in CHEM 411. Offered spring semester only. Lab fee: \$60.

CHEM411 - Intermediate Inorganic Chem 411-3 Intermediate Inorganic Chemistry. Fundamentals of inorganic chemistry, covering bonding and structure, coordination compounds and the chemistry of some familiar and less familiar elements. Three lectures per week. Prerequisite: CHEM 360. Offered spring semester only.

CHEM431 - Environmental Chemistry 431-3 Environmental Chemistry. Chemical principles applied to the environment and environmental problems. Chemical kinetics, thermodynamic and equilibrium concepts as they relate to the atmosphere, water and soil will be discussed to include current problems of pollutants, pollutant evaluation and pollutant remediation. Discussion of methods for the chemical analysis of environmental samples will also be included. Prerequisite: C or better in CHEM 330 and 340.

CHEM434 - Instrumental Analysis 434-2 to 4 Instrumental Analytical Chemistry. Theory and practice of instrumental measurements, including emission and absorption spectroscopic, capillary electrophoretic and chromatographic methods. Two lectures and two three-hour laboratories per week for four credits. Enrollment for two credit hours is restricted to graduate students in the Department of Chemistry and Biochemistry who are advised to take instrumental analysis. Prerequisite: C or better in CHEM 330. Offered fall semester only. Laboratory fee: \$60.

CHEM439 - Forensic Chemistry 439-3 Forensic Chemistry. A one-semester course in the analysis of forensics samples. Topics include sample collection and preservation, chain of custody, data validation and reports, and analytical methods which may include (as time permits) chromatography, mass spectroscopy, fluorescence and absorbance spectroscopy, fingerprint identification, and scanning electron and light microscopy. One lecture and one six-hour laboratory meeting per week. Prerequisite: C or better in CHEM 330 and 434. Offered spring semester only. Lab fee: \$60.

CHEM442 - Organic Chemistry II 442-3 Organic Chemistry II. This is a continuation of 340 emphasizing topics that were not covered in the first semester. Topics will include the chemistry of aromatic compounds, dienes and other carbon-carbon bond forming reactions. Advanced topics such as polymers and biomolecules may also be covered. Three lectures per week. Prerequisite: C or better in CHEM 340, 341; concurrent enrollment in 443 is recommended. Offered spring semester only.

CHEM443 - Organic Chemistry Lab II 443-2 Organic Chemistry Laboratory II. A second organic laboratory course based upon a synthetic approach. Students will learn modern synthetic organic chemistry techniques including modern spectroscopic techniques. One one-hour lecture and one four-

hour laboratory per week. Prerequisite: C or better in CHEM 340, 341, 442, or concurrent enrollment in 442. Offered spring semester only. Lab fee: \$60.

CHEM444 - Intermediate Organic Chem 444-3 Intermediate Organic Chemistry. A transitional course between introductory and graduate level chemistry. The chemistry of carbon compounds based upon a mechanistic approach will be discussed. Three lectures per week. Prerequisite: C or better in CHEM 340 and 442. Offered fall semester only.

CHEM451A - Biochemistry 451A-3 Biochemistry. (Same as BCHM 451A and MBMB 451A) First half of the 451 A,B two semester course. Must be taken in A,B sequence. Three lectures per week. Introduction to biomolecules, biochemical techniques, expression of genetic information, basic thermodynamics, ligand binding, aqueous solutions, protein structure, spectroscopy. Prerequisites: CHEM 340 and CHEM 342 or 442, or equivalents.

CHEM451B - Biochemistry 451B-3 Biochemistry. (Same as MBMB 451B and BCHM 451B) Second half of 451A,B two semester course. Must be taken in A,B sequence. Basic kinetics, enzyme kinetics, enzyme inhibitors, regulation of enzymes, oxidation-reduction, high energy bonds, transport across membranes, intermediary metabolism, hormonal control of metabolism. Prerequisites: MBMB 451A or BCHM 451A or CHEM 451A or equivalent.

CHEM452 - Advanced Biochemistry 452-3 Advanced Biological Chemistry. Advanced study of biological chemistry including the structure-function relationship in proteins, the mechanism of enzyme reactions and the biochemical basis of gene expression, signal transduction, nerve impulses, molecular motors and other physiological processes. For graduate students, this course may be taken to meet deficiencies in biochemical knowledge, but will not meet the formal coursework requirements for the master or doctoral level degrees. Prerequisite: C or better in CHEM 340, 341, 350.

CHEM453 - Advanced Biochemistry Lab 453-2 Advanced Biochemistry Laboratory. A one semester advanced biochemistry laboratory covering techniques and laboratory procedures for the isolation, purification and characterization of biomolecules. Two three-hour laboratories per week. Prerequisites: C or better in CHEM 350 and CHEM 351. Lab fee: \$60.

CHEM456 - Biophysical Chemistry 456-3 Biophysical Chemistry. (Same as MBMB 456 and BCHM 456) A one-semester course in Biophysical Chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics and spectroscopy applied to biological systems. Prerequisites: CHEM 340 and CHEM 342 or 442, MATH 141 or 150, MBMB 451A or BCHM 451A or CHEM 451A, or equivalents.

CHEM460 - Quantum Mechanics 460-3 Quantum Mechanics and Spectroscopy. An introduction to quantum mechanics and spectroscopy. Prerequisite: MATH 250; C or better in CHEM 360. MATH 221 or 305 is recommended as prerequisite or concurrent enrollment. Offered spring semester only.

CHEM463 - Physical Chem Lab II 463-1 Physical Chemistry Laboratory II. Experiments relating to topics covered in 460. Prerequisite: C or better in CHEM 460 or concurrent enrollment. One three-hour laboratory per week. Offered spring semester only. Lab fee: \$60.

CHEM468 - Application Symmetry to Chem 468-3 Application of Symmetry to Chemistry. The concepts of symmetry elements, groups and character tables will be taught. Symmetry will be applied to molecules in order to simplify and characterize their wave functions and vibrational frequencies. Prerequisite: C or better in CHEM 460. Offered spring semester in odd years only.

CHEM479 - Materials Chemistry 479-3 Principles of Materials Chemistry. Introduction to fundamental concepts of materials chemistry. Synthesis, characterization, processing and applications of different materials including solids, polymers, ceramics and molecularly designed materials. Prerequisite: CHEM 360, 411 or concurrent enrollment. Offered fall semester in odd years only.

CHEM489 - Special Topics in Chemistry 489-1 to 3 Special Topics in Chemistry. Special approval needed from the instructor and chair.

CHEM490 - Undergraduate Seminar 490-1 Undergraduate Seminar. Current topics in chemistry covered through literature review, presentations, reports of ongoing research and discussions.

Prerequisite/Co-requisite: CHEM 296, CHEM 396 or CHEM 496. Special approval needed from the instructor.

CHEM490H - Honors Seminar 490H-1 Honors Seminar. Current topics in chemistry covered through literature review, presentations, reports of ongoing research and discussions. Pre/Co-requisite: CHEM 496H. Special approval needed from the instructor.

CHEM496H - Honors Research 496H-1 to 6 Honors Research. Independent research under the direction of a faculty advisor culminating in a written report. Safety training is required. Prerequisite: C or better in CHEM 330. Special approval needed from the instructor and a minimum 3.0 grade point average in all chemistry course work.

CHEM499H - Honors Thesis 499H-3 Honors Thesis. Preparation of a well-written honors thesis under the supervision of a faculty advisor based on an honors research project. The written thesis will be submitted to the faculty advisor and the department. A public presentation of the honors thesis research is required as a seminar or poster presentation. A proposal for honors research must be submitted to the department one year prior to completion of the honors thesis. Pre/Co-requisite: CHEM 496H.

CHEM506 - Chemistry Topics for Teachers 506-3 Chemistry Topics for Teachers. This graduate-level chemistry course covers topics, methods and activities that target the needs of elementary and middle school science teachers. The course consists of a combination of lectures and laboratory experiments. The specific subjects covered during the course change, depending on the needs of the current students. This course may only be taken as part of an approved major. Special approval needed from the instructor.

CHEM511A - Advanced Inorganic Chem I 511A-3 Advanced Inorganic Chemistry. Principles of group theory and their application to molecular structure, ligand field theory and its application and magnetic properties of matter. Prerequisite: one year of physical chemistry, CHEM 411.

CHEM511B - Advanced Inorganic Chem II 511B-3 Advanced Inorganic Chemistry. Energetics, kinetics and mechanisms of inorganic systems. Prerequisite: one year of physical chemistry, CHEM 411.

CHEM519 - Advanced Topics Inorganic Chem 519-3 Advanced Topics in Inorganic Chemistry. Metal ions in biological processes and other selected topics to be announced by the department. Maximum credit nine semester hours. Special approval needed from the instructor.

CHEM531 - Intro Analytical Separations 531-3 Introduction to Analytical Separations. An introduction to the basic principles underlying separation science, with emphasis on all major chromatographies, gel and capillary electrophoresis, isoelectric focusing, field-flow fractionation, rate and isopycnic sedimentation, filtration, reverse osmosis and related methods. Prerequisite: MATH 250.

CHEM532 - Analytical Chem Instrumentatn 532-3 Analytical Chemistry Instrumentation. Introduction to analog and digital electronics and the computer control of system components. The course will focus on chemical instrumental and the use of filters, amplifiers and digital signal processing to improve sensitivity and detection limits. Two lectures and one three-hour laboratory per week. Prerequisite: CHEM 434.

CHEM533 - Analytical Spectroscopy 533-3 Analytical Spectroscopy. Fundamental and experimental aspects of electronic and vibrational spectrometry, with a particular emphasis on the spectroscopic analysis of atomic and molecular species. Various sources of electromagnetic radiation, detectors, optical components and the optimization of experimental methods are covered in detail. Common spectroscopic techniques are covered in detail and a portion of the course covers newly emerging techniques and developments. Prerequisite: CHEM 434.

CHEM534 - Electrochemistry 534-3 Electrochemistry. Fundamentals and applications of electrochemical methods, with emphasis on the thermodynamics and kinetics of electron transfer, electrode double-layer structures, as well as varied voltammetric techniques.

CHEM535 - Advanced Analytical Chem 535-3 Advanced Analytical Chemistry. Course surveys various statistical, data-manipulative, and numerical methods as applied to analytical chemistry, including probability distributions, methods of maximum likelihood, linear and nonlinear least squares, correlation coefficients, chi-square, F and T distributions, Pearson statistics, analysis of variance, convolution,

deconvolution, cross-correlation, autocorrelation, data acquisition, Nyquist theorem, aliasing, digitization errors, digital filtering, Monte Carlo methods, and finite-difference equations. Prerequisite: CHEM 434.

CHEM536 - Principles Mass Spectrometry 536-3 Principles of Mass Spectrometry. This course is an introduction to mass spectrometry with a focus on pharmaceutical and biological applications. Topics that will be covered include instrument design, ionization techniques, tandem mass spectrometry, chromatography/mass spectrometry and mass spectral interpretation. Prerequisite: CHEM 434.

CHEM537 - Fluorescence Spectroscopy 537-3 Fluorescence Spectroscopy. Fundamental and experimental aspects of analytical methods based on the various phenomena of luminescence. General principles of luminescence are covered in detail, as well as analytical techniques based on fluorescence quenching, energy transfer, polarization, and time resolved methods. Aspects of source of electromagnetic radiation, detectors, and electronic/optical components are discussed specifically as they pertain to fluorescence spectroscopy. Newly emerging fluorescence based techniques are also discussed. Prerequisite: CHEM 434 and CHEM 533 (or consent of the instructor).

CHEM538 - Nano Probing/Imaging 538-3 Nanoscale Probing and Imaging. This course covers basic principles of scanning probe microscopy and spectroscopy including STM, AFM, ACM and NSOM, and the broad applications in nanoscale probing and imaging. Topics include surface characterization and manipulation, nanolithography, nanomaterials, self-assembly, molecular electronics, optoelectronics, nanoscale electron transfer, single-molecular spectroscopy, protein structures, enzyme dynamics, and living cell imaging. Prerequisite: undergraduate physical and analytical chemistry.

CHEM539 - Adv Topics in Analytical Chem 539-3 Advanced Topics in Analytical Chemistry. Selected topics of interest to practicing analytical chemists such as microanalytical chemistry, functional-group chemical determinations, absorption spectroscopy and electroanalytical chemistry. Maximum credit nine semester hours. Prerequisite: CHEM 434 with a minimum grade of C.

CHEM541 - Structure and Reactivity 541-3 Organic Structure and Reactivity. Structure and reactivity of organic compounds: steric, electronic, kinetic and thermodynamic aspects and their relation to reactive intermediates.

CHEM542 - Mechanistic Organic Chem 542-3 Mechanistic Organic Chemistry. Reaction mechanisms in organic chemistry. Electrocyclic and sigmatropic reactions, cycloadditions, free radicals, photochemistry and organometallic catalysis. Spectroscopic methods.

CHEM543 - Synthetic Organic Chem 543-3 Synthetic Organic Chemistry. Organic synthesis: classical and modern methods.

CHEM549 - Adv Topics in Organic Chem 549-3 Advanced Topics in Organic Chemistry. Specialized topics in organic chemistry. The topic to be covered is announced by the department. Maximum credit nine semester hours. Prerequisite: CHEM 542.

CHEM552 - Structure and Function 552-3 Biomolecular Structure and Function. This course will cover the structural basis of biomolecules with an emphasis on the chemical and physical aspects involved in the architecture of proteins and nucleic acids. The study of the physical properties of biomolecular interactions and assembly of biomolecules into macromolecular complexes will be covered. Interpretation of data from atomic resolution techniques will be discussed. Prerequisites: CHEM 350 or CHEM 451A/B or equivalent.

CHEM559 - Adv Topics in Biological Chem 559-3 Advanced Topics in Biological Chemistry. Specialized topics in biological chemistry. The topic to be covered is announced by the department. Maximum credit nine semester hours. Prerequisite: C or better in CHEM 350 or CHEM 451A,B or equivalent.

CHEM560 - Intro to Quantum Chemistry 560-3 Introduction to Quantum Chemistry. Basic principles and applications of quantum mechanics to chemistry. Topics include operator and vector algebra, classical mechanics, angular momentum, approximate methods, hydrogen-like atoms and molecular electronic structure. Three lectures per week. Prerequisite: one year of undergraduate physical chemistry.

CHEM561 - Molecular Orbital Theory 561-3 Molecular Orbital Theory. An introduction to molecular orbital theory. Applications and limitations of various methods. Three lectures per week. Prerequisite: one year of undergraduate physical chemistry including quantum mechanics.

CHEM562 - Adv Molecular Spectroscopy 562-3 Advanced Molecular Spectroscopy. Theory of rotational and vibrational spectroscopy, electronic spectroscopy of molecules. Three lectures per week. Prerequisite: CHEM 468 or consent of instructor.

CHEM563 - Comput Chem Materials Sci 563-3 Computational Chemical and Materials Sciences. An introduction to commercial molecular modeling softwares and to performing designed research projects related to chemical and materials sciences. Three lectures per week. Prerequisite: CHEM 360 and CHEM 460 (1 year of undergraduate Physical Chemistry) or consent of instructor.

CHEM564 - Statistical Thermodynamics 564-3 Statistical Thermodynamics. Principles of statistical mechanics and applications to equilibrium and nonequilibrium systems. Topics include ideal gases, monatomic crystals, lattice statistics, the cluster method, correlation functions, Brownian motion, the Boltzmann equation and the Kubo-Green technique. Three lectures per week.

CHEM569 - Adv Topics in Physical Chem 569-3 Advanced Topics in Physical Chemistry. Topic to be announced by the department. Maximum credit nine semester hours. Special approval needed from the instructor.

CHEM575 - Material Characterization 575-3 Methods of Materials Characterization. An introduction to the structural, morphological, spectroscopic, and thermal characterization techniques commonly used in materials chemistry. Special approval needed from the instructor.

CHEM579 - Topics Advanced Materials 579-3 Topics in Advanced Materials. Design and applications of advanced materials. Special topics will focus on contemporary research areas of interest as determined by the instructor. Special approval needed from the instructor.

CHEM592 - Introduction to Research 592-1 Introduction to Research. Introduction to the techniques and methods of chemical research including good laboratory practice, research ethics, record keeping, publication, patents and currently active research in this department. Graded S/U only.

CHEM593A - Graded Seminar 593A-1 Graded Seminar-Literature Seminar. Seminar presentations on advanced topics given in partial fulfillment of the requirements for the MS and PhD degrees in Chemistry.

CHEM593B - Graded Seminar 593B-1 Graded Seminar-Independent Proposal Presentation. Seminar presentations on advanced topics given in partial fulfillment of the requirements for the MS and PhD degrees in Chemistry.

CHEM593C - Graded Seminar 593C-1 Graded Seminar-Research Seminar. Seminar presentations on advanced topics given in partial fulfillment of the requirements for the MS and PhD degrees in Chemistry.

CHEM594A - Spec Readings-Analytical 594A-2 to 3 Special Readings in Chemistry. Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Analytical. Maximum credit three hours.

CHEM594B - Spec Readings-Biochemistry 594B-2 to 3 Special Readings in Chemistry. Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Biochemistry. Maximum credit three hours.

CHEM594C - Spec Readings-Inorganic 594C-2 to 3 Special Readings in Chemistry. Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Inorganic. Maximum credit three hours.

CHEM594D - Spec Readings-Organic 594D-2 to 3 Special Readings in Chemistry. Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Organic. Maximum credit three hours.

CHEM594E - Spec Readings-Physical 594E-2 to 3 Special Readings in Chemistry. Assigned library work in any of these fields of chemistry with individual instruction by a staff member. Physical. Maximum credit three hours.

CHEM594F - Spec Readings-Hist Chem 594F-2 to 3 Special Readings in Chemistry. Assigned library work in any of these fields of chemistry with individual instruction by a staff member. History Chemistry. Maximum credit three hours.

CHEM595A - Adv Seminar-Analytical 595A-1 Advanced Seminar in Chemistry. Advanced level talks presented by graduate students. Analytical.

CHEM595B - Adv Seminar Chemistry-Biochem 595B-1 Advanced Seminar in Chemistry-Biochemistry. Advanced level talks presented by graduate students.

CHEM595C - Adv Sem-Inorganic 595C-1 Advanced Seminar in Chemistry. Advanced level talks presented by graduate students. Inorganic.

CHEM595D - Adv Sem-Organic 595D-1 Advanced Seminar in Chemistry. Advanced level talks presented by graduate students. Organic.

CHEM595E - Adv Sem-Physical Chem 595E-1 Advanced Seminar in Chemistry. Advanced level talks presented by graduate students. Physical chemistry.

CHEM596 - Master's Degree Research 596-1 to 6 (1 to 3 per semester) Master's Degree Research. Graded research for Master's Degree only. Maximum 6 credit hours. Prerequisite: Completion of at least 9 hours of graded graduate course work in the program. Restricted to admission to Master's program in Chemistry and Biochemistry. Special approval needed from student's graduate advisory committee.

CHEM597 - Professional Training 597-1 to 15 Professional Training. Experience in teaching of chemistry, instrument operation and special research projects. One hour required each semester in residence. Graded S/U only. Restricted to graduate standing.

CHEM598 - Research 598-1 to 50 (1 to 12 per semester) Research. Maximum credit 50 hours, except by permission of the student's graduate advisory committee. Graded S/U only. Special approval needed from the chair.

CHEM599 - Thesis 599-1 to 6 Thesis. Maximum credit six hours. Special approval needed from the chair.

CHEM600 - Dissertation 600-1 to 30 (1 to 12 per semester) Dissertation-Doctoral. Requirement for Ph.D. degree, 24 hours. Maximum credit 30 hours, except by permission of the student's graduate advisory committee. Prerequisite: CHEM 598.

CHEM601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

CHEM699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted

Chemistry and Biochemistry Faculty

Bancroft, Senetta F., Assistant Professor, Ph.D., University of Akron, 2014.

Deria, Pravas, Assistant Professor, Ph.D., University of Pennsylvania, 2009.

Du, Zhihua, Associate Professor, Ph.D., University of Texas, 1997

Gagnon, Keith T., Assistant Professor, Ph.D., North Carolina State University, 2007.

Gao, Yong, Associate Professor, Ph.D., University of Alberta, 1998.

Ge, Qingfeng, Professor, Ph.D., Tiangin University, 1991.

Goodson, Boyd M., Professor, Ph.D., University of California, Berkeley, 1999.

Hinckley, Conrad C., Professor, Emeritus, Ph.D., University of Texas, 1964.
Kinsel, Gary R., Professor, Ph.D., University of Colorado-Boulder, 1989.
Kohli, Punit, Professor, Michigan State University 2000.
Koropchak, John A., Professor, Emeritus, Ph.D., University of Georgia, 1980.
Koster, David F., Professor, Emeritus, Ph.D., Texas A & M University, 1965.
Moran, Sean D., Assistant Professor, Ph.D., Columbia University, 2008.
McCarroll, Matthew E., Professor, Ph.D., University of Idaho, 1998.
Plunkett, Kyle N., Associate Professor, Ph. D., University of Illinois, 2005.
Shamsi, Mohtashim H., Assistant Professor, Ph.D., University of Toronto, 2012.
Smith, Gerard V., Professor, Emeritus, Ph.D., University of Arkansas, 1959.
Suni, Ian I., Professor, Ph.D., Harvard University, 1992.
Trimble, Russell F., Professor, Emeritus, Ph.D., Massachusetts Institute of Technology, 1951.
Tyrrell, James, Professor, Emeritus, Ph.D., University of Glasgow, 1963.
Wang, Lichang, Professor and Chair, Ph.D., University of Copenhagen, 1993.

Civil and Environmental Engineering

The Department of Civil and Environmental Engineering provides educational opportunities that will prepare students for effective and productive careers in Civil Engineering and other related professions. Continued professional growth, discovery, innovation and development of technologies, and service to the community are characteristics of this area of study.

The primary mission of the Department is to prepare students for careers that will span forty years or more. Most Civil and Environmental Engineers will be employed by public agencies at all levels of government, by various industries, and by a variety of large and small consulting firms. Virtually all of this practice relates in some way to the health, safety, and welfare of the general public. Those involved in this field will need to possess the ability to conceptualize, plan, design, and construct new and innovative works and systems. Technical knowledge of great sophistication will be needed, as well as an understanding of the interrelated social, political, and environmental issues that will be key elements in the decision making process.

Preparing Engineers for this role requires a broad liberal education program as well as one of technical depth and breadth. The undergraduate core curriculum is broad-based and includes courses in mathematics, science, communication, and social science. The Civil Engineering curriculum begins with fundamental engineering skills and ends with a two-semester capstone design experience. Students are required to take courses in environmental engineering, geotechnical engineering, hydraulic engineering, structural engineering, and surveying.

The educational goal of the undergraduate civil engineering program is to provide a quality civil engineering education that will prepare our graduates to become practicing professionals able to meet the technological challenges of the 21st century. To this end we strive to instill in our graduates the knowledge, skills, attitudes, and ethical and social values necessary to be successful civil engineering practitioners. Also, we seek to provide the necessary academic background for successful graduate study in engineering or other fields. To meet this goal, we have defined the following objectives that describe what our graduates are expected to attain within three to five years after graduation.

1. Apply technical knowledge and skills to formulate solutions to real-world problems that are fundamental to civil engineering analysis and design.
2. Successfully pursue advanced degrees or professional development activities that support life-long learning and professional licensure.
3. Act in a professional and ethical manner, and consider resource sustainability, public safety, health and welfare in their professional work.
4. Effectively contribute to multidisciplinary teams.

The program is designed to provide the students with the broad educational background essential to civil engineering practice with emphases in the areas of environmental engineering, geotechnical engineering, hydraulic engineering, and structural engineering. Students may choose to specialize in the area of

Environmental Engineering. The program offers sufficient number of courses in the structural engineering area to qualify for structural engineer (SE) license exam.

The Department of Civil and Environmental Engineering offers a program leading to a Bachelor of Science degree in Civil Engineering. Students may choose to earn a Bachelor of Science degree in Civil Engineering with specialization in Environmental Engineering.

The undergraduate program in civil engineering is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

The SIU Capstone Option (see chapter three) is available to students who have earned an Associate in Engineering Sciences (AES) degree with a minimum cumulative 2.0/4.0 GPA on all accredited coursework prior to the completion of the AES, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. Students interested in the Capstone Option should contact the College of Engineering Advisement Office to develop a personal coursework pathway to degree completion.

Technical Enhancement Program

The objective of the Technical Enhancement Program (TEP) is to encourage students to enhance their technical and soft skills, thus improving their marketability upon graduation. This program is available to freshmen only. Students must fulfill the requirements of the program in order to receive a certificate of completion from the Department. The Department of Civil and Environmental Engineering has developed this program in collaboration with its Professional Advisory Board. For additional details and how to participate, please contact the Department or visit the Department website at engineering.siu.edu/civil

Bachelor of Science Degree in Civil Engineering, College of Engineering

Civil Engineering Major

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Foundation Skills	13
UNIV 101	1
ENGL 101, ENGL 102	6
MATH 150	3
CMST 101	3
Disciplinary Studies	23
Fine Arts	3
Human Health (BIOL 202 or an approved substitute)	2
Humanities ²	6
Science (substitute PHYS and CHEM in major)	6

Degree Requirements	Credit Hours
Social Science	3
ECON 240	3
Integrative Studies	3
Multicultural	3
Requirements for Major in Civil Engineering	(9) + 88
Basic Sciences	(6) + 9
CHEM 200, CHEM 201, CHEM 210	(3) + 4
PHYS 205A,B, PHYS 255A,B	(3) + 5
Mathematics	(3) + 14
MATH 150, MATH 250, MATH 251, MATH 305	(3) + 11
ENGR 351	3
Required Engineering Courses: ENGR 250, ENGR 261, ENGR 350A, ENGR 370A	12
Required CE Courses:	41
CE 251, CE 263, CE 301, CE 310, CE 310L, CE 320, CE 320L, CE 330, CE 340, CE 418, CE 421, CE 442, CE 444, CE 474, CE 495A, CE 495B	39
Technical Elective: ³	12
Total	127

1 Courses required for the major will apply toward nine hours of University Core Curriculum, making a total of 39 in that area.

2 Department requirements for University Core Curriculum are more restrictive than those of the University as a whole. Students should consult advisor for approved courses. Students transferring from other programs or institutions will be required to meet the University Core Curriculum requirements for engineering students.

3 Approved technical electives: CE 331 and CE 400-level courses.

Bachelor of Science Degree in Civil Engineering, College of Engineering

Environmental Engineering Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Foundation Skills	13
UNIV 101	1
ENGL 101, ENGL 102	6
MATH 150	3
CMST 101	3
Disciplinary Studies	23
Fine Arts	3
Human Health (BIOL 202 or an approved substitute)	2
Humanities ²	6
Science (substitute PHYS and CHEM in major)	6
Social Science	6
ECON 240	3
Integrative Studies	3
Multicultural	3
Requirements for Major in Civil Engineering	(9) + 88
Basic Sciences	(6) + 9
CHEM 200, CHEM 201, CHEM 210	(3) + 4
PHYS 205A,B, PHYS 255A,B	(3) + 5
Mathematics	(3) + 14
MATH 150, MATH 250, MATH 251, MATH 305	(3) + 11

Degree Requirements	Credit Hours
ENGR 351	3
Required Engineering Courses: ENGR 250, ENGR 261, ENGR 350A, ENGR 370A	12
Required CE Courses: CE 251, CE 263, CE 301, CE 310, CE 310L, CE 320, CE 320L, CE 330, CE 340, CE 418, CE 421, CE 442, CE 444, CE 474, CE 495A, CE 495B	41
Technical Elective ³	12
Total	127

1 Courses required for the major will apply toward nine hours of University Core Curriculum, making a total of 39 in that area.

2 Department requirements for University Core Curriculum are more restrictive than those of the University as a whole. Students should consult advisor for approved courses. Students transferring from other programs or institutions will be required to meet the University Core Curriculum requirements for engineering students.

3 Approved technical electives: CE 410, CE 412, CE 413, CE 419, CE 422, CE 471, CE 472, CE 473, and ME 416.

Civil and Environmental Engineering Courses

CE251 - Probability & Statistics 251-1 Introduction to Probability and Statistics for Engineering. An introduction to probability and statistics, with emphasis on engineering applications. Univariate and bivariate statistics, simple linear regression, examination of regression residuals, measurement errors, uncertainty propagation, axioms of probability, independence of events, conditional probability and Bayes' rule. Prerequisite: MATH 150 with a grade of C or better.

CE263 - Basic Surveying 263-3 Basic Surveying. An introductory course designed to introduce the principles, theory and equipment of surveying. Development of survey field practices on the earth's surface and subsurface and related computations. Prerequisite: MATH 111 with a grade of C or better.

CE301 - Intro to Sustainability 301-2 Introduction to Resource Sustainability in Civil and Environmental Engineering. An introduction to sustainable use of resources, economics of sustainable design, life cycle assessment, consideration of sustainability in various civil engineering applications, case studies on resource sustainability. Prerequisite: ECON 240.

CE310 - Environmental Engineering 310-3 Environmental Engineering. Basic engineering aspects of water, land and air pollution and control. Problems, sources and effects of pollution. Major state and federal regulations relating to environmental issues. Prerequisite: CHEM 210, MATH 250 with a grade of C or better, CE 251, concurrent enrollment in CE 310L.

CE310L - Environmental Engineering Lab 310L-1 Environmental Engineering Laboratory. Environmental Engineering Laboratory Experiments. Prerequisite: CHEM 210, MATH 250 with a grade of C or better; CE 251, completion of or concurrent enrollment in CE 310. If CE 310 is dropped CE 310L must also be dropped. Lab fee: \$30.

CE320 - Soil Mechanics 320-3 Soil Mechanics. Physical and mechanical properties of soils, soil classification, flow through soils, effective stresses, geostatic stress and stresses due to applied loads,

one-dimensional consolidation, introduction to shear strength, and soil compaction. Prerequisite: CE 251, concurrent enrollment in CE 320L, ENGR 350A.

CE320L - Soil Mechanics Lab 320L-1 Soil Mechanics Laboratory. Soil Mechanics Laboratory Experiments. Prerequisites: CE 251, ENGR 350A, completion of or concurrent enrollment in CE 320. If CE 320 is dropped CE 320L must also be dropped. Lab fee: \$30.

CE330 - Civil Engineering Materials 330-3 Civil Engineering Materials. Introduction of cements and aggregates; production and evaluation of concrete structures; mechanical properties of steels and timber, mixing and evaluation of pavement materials; testing of asphalt and masonry. Prerequisite: CE 251, ENGR 350A. Lab fee: \$30.

CE331 - Transportation Engineering 331-3 Transportation Engineering. Introduction to geometric design, earth work, drainage and traffic. Basic design principles for each area and their application to typical problems. Prerequisite: completion of or concurrent enrollment in CE 330.

CE340 - Structures 340-3 Structures. Loads. Types of structures. Structural materials. Safety. Analysis of statically determinate beams, trusses, and frames under static loads. Influence lines. Moving loads, Cables, Arches, Space trusses, Deflection of beams, trusses, and frames. Moment distribution for beams. Prerequisite: ENGR 350A or ENGR 350B,C.

CE392 - CE Co-op Education 392-1 to 6 Civil Engineering Cooperative Education. Supervised work experience in industry, government or professional organization. Students work with on-site supervisor and faculty adviser. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Restricted to sophomore standing.

CE410 - Hazardous Waste Engineering 410-3 Hazardous Waste Engineering. (Same as CE 510) Analysis of hazardous waste generation, storage, shipping, treatment, and disposal. Source reduction methods. Government regulations. Remedial action. Prerequisite: CE 310.

CE412 - Contaminant Transport 412-3 Contaminant Fate, Transport and Remediation in Groundwater. Mathematics of flow and mass transport in the saturated and vadose zones; retardation and attenuation of dissolved solutes; flow of nonaqueous phase liquids; review of groundwater remediation technologies; review of flow and transport models. Prerequisite: CE 310 and 320, or consent of instructor for non CE majors.

CE413 - Collection Systems Design 413-3 Collection Systems Design. Design of waste water and storm water collection systems including installation of buried pipes. Determination of design loads and flows, system layout and pipe size. Prerequisite: CE 310 and ENGR 370A.

CE418 - Water & Wastewater Treatment 418-3 Water and Wastewater Treatment. A study of the theory and design of water and wastewater treatment systems, including physical, chemical, and biological processes. Topics include sedimentation, biological treatment, hardness removal, filtration, chlorination and residuals management. Prerequisite: CE 310, ENGR 370A and completion of/concurrent enrollment in ENGR 351.

CE419 - Advanced Water Wastewtr Trtmt 419-3 Advanced Water and Wastewater Treatment. Advanced concepts in the analysis and design of water and wastewater treatment plants. Topics include advanced physical, chemical, and biological processes. Emphasis is on the treatment and disposal of sludges, design of facilities, advanced treatment principles, and toxics removal. Prerequisite: CE 418.

CE421 - Foundation Design 421-3 Foundation Design. Application of soil mechanics to the design of the foundations of structures; subsurface exploration; bearing capacity and settlement analysis of shallow foundations; lateral earth pressures and design of retaining walls; capacity and settlement of pile foundations for vertical axial loads. Prerequisite: CE 320.

CE422 - Environmental Geotechnology 422-3 Environmental Geotechnology. Geotechnical aspects of land disposal of solid waste and remediation, solute transport in saturated soils, waste characterization and soil-waste interaction, engineering properties of municipal wastes, construction quality control of liners, slope stability and settlement considerations, use of geosynthetics and geotextiles, cap design, gas generation, migration and management. Prerequisite: CE 310, 320.

CE423 - Geotechnical Engr Prof Practic 423-3 Geotechnical Engineering in Professional Practice. Application of principles of geotechnical engineering in a real-world setting; planning, managing and executing geotechnical projects; developing proposals and geotechnical project reports; interpreting and using recommendations developed by geotechnical engineers; total quality management, professional liability and risk management. Prerequisite: CE 320, 421 or concurrent enrollment or consent of instructor.

CE426 - Seepage and Slope Stability 426-3 Seepage and Slope Stability Analysis. (Same as CE 526) Seepage through soils; numerical and physical modeling of two-dimensional flow; basic mechanism of slope stability analysis; analytical methods in analyzing slopes; slope stabilization. Prerequisite: CE 320.

CE431 - Pavement Design 431-3 Pavement Design. Design of highway pavements including subgrades, subbases, and bases; soil stabilization; stresses in pavements; design of flexible and rigid pavements; cost analysis and pavement selection; and pavement evaluation and rehabilitation. Prerequisite: CE 320 and 330.

CE432 - CADD for Civil Engineers 432-3 Computer Aided Design and Drawing (CADD) for Civil Engineers. A study of civil engineering drawings and their relationship to engineering design in the CADD environment. Emphasis is on the skills associated with developing and understanding technical drawings, including construction plans and related documents, for engineering design. Computer based design and drawing techniques and related software. Includes 3 hours lab per week. Prerequisite: Completion of or concurrent enrollment in CE 263.

CE440 - Static Indeterminate Structure 440-3 Statically Indeterminate Structures. Analysis of trusses, beams, and frames. Approximate methods. Method of consistent deformations. Three-moment theorem. Slope deflection. Moment distribution. Column analogy. Plastic analysis. Matrix methods. Prerequisite: CE 340.

CE441 - Matrix Methods Structural Analysis 441-3 Matrix Methods of Structural Analysis. Flexibility method and stiffness method applied to framed structures. Introduction to finite elements. Prerequisite: CE 340.

CE442 - Structural Steel Design 442-3 Structural Steel Design. An introduction to structural steel design with an emphasis on buildings. Design of structural members and typical welded and bolted connections in accordance with the specifications of the Steel Construction Manual of the American Institute of Steel Construction (AISC). Design project and report required. Prerequisite: CE 340.

CE444 - Reinforced Concrete Design 444-3 Reinforced Concrete Design. Behavior and strength design of reinforced concrete beams, slabs, compression members, and footings. Prerequisite: CE 340.

CE445 - Earthquake Engineering 445-3 Fundamental Theory of Earthquake Engineering. The nature and mechanics of earthquakes. Plate tectonics, types of faulting, recording and measuring ground motion. Analysis of free and forced vibration of a single degree of freedom system. Steady state and transient response. Impulse response function. Dynamic amplification and resonance. Response to ground motion. Response spectrum analysis. Prerequisite: CE 320, 340, or consent of instructor.

CE446 - Prestressed Concrete Design 446-3 Prestressed Concrete Design. Fundamental concepts of analysis and design. Materials. Flexure, shear, and torsions. Deflections. Prestress losses. Composite beams. Indeterminate structures. Slabs. Bridges. Prerequisite: CE 444 or concurrent enrollment or consent of the instructor.

CE447 - Seismic Design of Structures 447-3 Seismic Design of Structures. Basic seismology, earthquake characteristics and effects of earthquakes on structures, vibration and diaphragm theories, seismic provisions of the International Building Code, general structural design and seismic resistant concrete and steel structures. Prerequisite: CE 442 or CE 444, concurrent enrollment or consent of instructor.

CE448 - Structural Design Hwy Bridges 448-3 Structural Design of Highway Bridges. Structural design of highway bridges in accordance with the specifications of the American Association of State Highway and Transportation Officials (AASHTO); superstructure includes concrete decks, steel girders, prestressed and post-tensioned concrete girders; substructure includes abutments, wingwalls, piers, and footings. Prerequisite: CE 442 or 444 or concurrent enrollment, or consent of instructor.

CE451 - Intro to Finite Elements 451-3 Introduction to Finite Elements in Engineering Applications. (Same as CE 551) An introduction to finite element techniques and computer methods in finite element applications. Theory and structure of algorithms for one-dimensional and multi-dimensional problems. Applications in solid mechanics, structural analysis, groundwater and fluid flow, and heat transfer. Prerequisite: ENGR 351.

CE471 - Groundwater Hydrology 471-3 Groundwater Hydrology. Analysis of groundwater flow and the transport of pollution by subsurface flow; applications to the design of production wells and remediation of polluted areas; finite difference methods for subsurface analyses. Prerequisite: ENGR 370A or consent of instructor.

CE472 - Open Channel Hydraulics 472-3 Open Channel Hydraulics. Open channel flow, energy and momentum, design of channels, gradually varied flow computations, practical problems, spatially varied flow, rapidly varied flow, unsteady flow, flood routing, method of characteristics. Prerequisite: CE 474 or consent of instructor.

CE473 - Hydrologic Analysis & Design 473-3 Hydrologic Analysis and Design. Hydrological cycle, stream-flow analysis, hydrograph generation, frequency analysis, flood routing, watershed analysis, urban hydrology, flood plain analysis. Application of hydrology to the design of small dams, spillways, drainage systems. Prerequisite: ENGR 370A.

CE474 - Water Resources Engineering 474-3 Water Resources Engineering. Hydrological Cycle, Flow Estimation, Study of pipe flow, network systems, pump selection, open channel flow, uniform flow, critical flow, gradually varied flow, rapidly varied flow, Introduction to HEC-RAS, design of transitions, water surface profiles. Prerequisite: ENGR 370A.

CE486 - Nondestructive Eval Engr Matls 486-3 Nondestructive Evaluation of Engineering Materials. (Same as ME 486) Overview of common nondestructive evaluation (NDE) techniques, such as visual inspection, eddy current, X-ray, and ultrasonics, to measure physical characteristics of and to detect defects in engineering materials. Laboratory experiments include contact ultrasonic, magnetic particle, liquid penetrant, and infrared thermography methods of testing. Prerequisites: CE 320 and CE 330 with grades of C or better.

CE492A - Special Probs-Structural Engr 492A-1 to 4 Special Problems in Civil Engineering. Selected engineering topics or problems in structural engineering. Four hours maximum credit. Not for graduate credit. Special approval needed from the instructor.

CE492B - Special Probs-Hydraulic Engr 492B-1 to 4 Special Problems in Civil Engineering. Selected engineering topics or problems in hydraulic engineering. Four hours maximum credit. Not for graduate credit. Special approval needed from the instructor.

CE492C - Spec Probs-Environmental Engr 492C-1 to 4 Special Problems in Civil Engineering. Selected engineering topics or problems in environmental engineering. Four hours maximum credit. Not for graduate credit. Special approval needed from the instructor.

CE492D - Special Prob-Applied Mechanics 492D-1 to 4 Special Problems in Civil Engineering. Selected engineering topics or problems in applied mechanics. Four hours maximum credit. Not for graduate credit. Special approval needed from the instructor.

CE492E - Spec Prob-Geotechnical Engr 492E-1 to 4 Special Problems in Civil Engineering. Selected engineering topics or problems in geotechnical engineering. Four hours maximum credit. Not for graduate credit. Special approval needed from the instructor.

CE492F - Spec Prob-Computatnl Mechanics 492F-1 to 4 Special Problems in Civil Engineering. Selected engineering topics or problems in computational mechanics. Four hours maximum credit. Not for graduate credit. Special approval needed from the instructor.

CE492G - Special Probs-Surveying Engr 492G-1 to 4 Special Problems in Civil Engineering. Selected engineering topics or problems in surveying engineering. Four hours maximum credit. Not for graduate credit. Special approval needed from the instructor.

CE495A - Civil Engineering Design 495A-3 Civil Engineering Design. Engineering ethics and professionalism. Project development skills, feasibility and cost-estimation, project management, auto-cad applications in civil engineering. Selection of projects, formation of design teams, development of a design proposal. Written and oral presentations of the design proposal. Not for graduate credit. Prerequisite: PHYS 205B and PHYS 255B with a grade of C or better, completion of/concurrent enrollment in CE 301, 320, 330, 418, 442 or 444, and 474.

CE495B - Civil Engineering Design 495B-3 Civil Engineering Design. A capstone design experience using a team approach for the preliminary and final design of a civil engineering project. Documentation of all stages of the design project. Written and oral presentation of the final design. Not for graduate credit. Prerequisite: CE 495A, completion of/concurrent enrollment in CE 421 and 442 or 444.

CE500 - Seminar 500-1 to 4 Seminar. Collective and/or individual study of selected issues and problems relating to various areas of civil engineering. Restricted to graduate standing.

CE510 - Hazardous Waste Engineering 510-3 Hazardous Waste Engineering. (Same as CE 410) Analysis of hazardous waste generation, storage, shipping, treatment, and disposal. Source reduction methods. Government regulations. Remedial action. Design projects and presentation required. Prerequisite: Graduate standing in the program or consent of instructor.

CE511 - Nanotechnology 511-3 Nanotechnology and Subsurface Remediation. Conventional and emerging nanotechnology-based remediation technologies for subsurface environment; review of current soil and groundwater remediation technologies; sediment remediation, nano-synthesis, characterization and nanotechnology-driven remediation technologies and materials. Special approval needed from the instructor.

CE512 - Contaminant Transport 512-3 Contaminant Fate, Transport and Remediation in Groundwater. (Same as CE 412) Mathematics of flow and mass transport in the saturated and vadose zones; retardation and attenuation of dissolved solutes; flow of nonaqueous phase liquids; review of groundwater remediation technologies; review of flow and transport models; modeling project. Special approval needed from the instructor.

CE514 - Environmental Engr Chemistry 514-3 Environmental Engineering Chemistry. Fundamentals as well as frontiers in aquatic chemistry, environmental organic chemistry, and environmental biochemistry. Topics include thermodynamics and kinetics of redox reactions, linear free energy relations, abiotic organic compound transformations, stoichiometry, energetics and kinetics of microbial reactions, biochemical basis of the transformation of key organic and inorganic pollutants in the environment. Prerequisite: CE 418 or consent of instructor.

CE516 - Water Quality Modeling 516-3 Water Quality Modeling. Water quality factors and control methods. Technical, economic, social and legal aspects concerned with implementation of various engineered systems for water quality management. Case studies. Prerequisite: CE 418.

CE517 - Industrial Waste Trtmt 517-3 Industrial Waste Treatment. Theories and methods of treating industrial wastes. Case studies of major industrial waste problems and their solutions. Prerequisite: CE 418.

CE518 - Adv Biol Treatment Processes 518-3 Advanced Biological Treatment Processes. The biochemical and microbial aspects of converting substrate to bacterial cell mass or products and its use in various phases of industry (both fermentation and wastewater treatment). Design of activated sludge and trickling filter plants from lab data obtained on explicit wastes from both industry and municipalities. Prerequisite: CE 418.

CE519 - Sustainability 519-3 Triple E Sustainability - Environment Energy and Economy. Principles, goals, and practical applications of sustainable development; major theories and issues related to sustainability in the areas of environmental resource use, energy production, and process life cycle analysis; identify and design sustainable approaches on common areas of interest to the society, such as buildings, transportation, food, industry processes, and ecology. Special approval needed from the instructor.

CE520 - Advanced Soil Mechanics 520-3 Advanced Soil Mechanics. Advanced theories in soil mechanics, stress distribution in soils, seepage, consolidation, shear strength, settlement analysis and stability of slopes. Prerequisite: CE 320, ENGR 350A,B, CE 421 or concurrent enrollment.

CE521 - Soil Improvement 521-3 Soil Improvement. Methods of soil stabilization, compaction, dynamic compaction, chemical treatment, compaction piling, stone columns, dewatering, soil reinforcement with stirrups, geomembranes and geogrids, ground freezing, stabilization of industrial wastes. Prerequisite: CE 320, CE 421.

CE522 - Adv Foundation Engineering 522-3 Advanced Foundation Engineering. Case histories of foundation failure, bearing capacity theories, shallow foundations, deep foundations, piles under vertical and horizontal loads, pier foundations, foundations for difficult soil conditions, soil improvement. Prerequisite: CE 421.

CE523 - Soil Dynamics 523-3 Soil Dynamics. Problems in dynamic loading of soils, dynamic soil properties, liquefaction, dynamic earth pressure, foundations for earthquake and other dynamic loads. Prerequisite: CE 320 and CE 421.

CE524 - Advanced Soil Testing 524-3 Advanced Soil Testing. Review of basic laboratory tests on soils, hands-on training for performing advanced laboratory tests on soils such as: triaxial compression, flexible wall permeability, one-dimensional consolidation, and California bearing ratio, understanding ASTM standards, sample preparation, data reduction and interpretation, and development of detailed laboratory test reports. Prerequisite: CE 421, or consent of instructor.

CE525 - Foundations for Dynamic Loads 525-3 Foundations for Dynamic Loads. Dynamic loads due to natural and man-made phenomena, damage to humans and the environment, property loss, analytical models for response analysis of foundation-soil systems for steady state, seismic and impact loads, design criteria, determination of soil properties, stiffness and damping of foundation-soil systems, design of shallow and deep foundations for various types of dynamic loads, computer applications, case histories of damage. Prerequisite: CE 421 and CE 445 or consent of instructor.

CE526 - Seepage and Slope Stability 526-3 Seepage and Slope Stability Analysis. (Same as CE 426) Seepage through soils; numerical and physical modeling of two-dimensional flow; basic mechanism of slope stability analysis; analytical methods in analyzing slopes; slope stabilization. Additional project and presentation required for students taking this course instead of CE 426. Prerequisite: CE 320 or consent of instructor.

CE530 - Adv Materials Testing 530-3 Advances in Materials and Testing. An introduction to advances in concrete technology; High strength concrete; Light-weight concrete; Cement and polymer composites; and Non-destructive testing. Fundamental concepts, manufacture, performance, testing, design methodology and applications. Prerequisite: CE 330 or equivalent or consent of instructor.

CE540 - Structural Dynamics 540-3 Structural Dynamics. Analysis of the dynamic response of multidegree-of-freedom framed structures. Structural idealizations. Matrix formulation. Lagrange's equations. Response calculation by mode-superposition and direct integration methods. Analysis for earthquakes. Prerequisite: CE 340 or consent of instructor.

CE542 - Nonlinear Struct Analysis 542-3 Nonlinear Structural Analysis. Analysis of the nonlinear response of framed structures subjected to static and dynamic loads. Structural idealizations. Response calculation by incremental and iterative techniques. Instability phenomena of snap-through and bifurcation. Post-buckling behavior. Approximate formulations. Detection of instability under dynamic loads. Prerequisite: CE 441 or CE 551 or consent of instructor.

CE544 - Adv Des: Reinforced Concrete 544-3 Advanced Design of Reinforced Concrete. Deep beams, shear friction. Slab, beam, girder systems. Monolithic joints. Retaining walls. Deflections. Length effects on columns. Two-way floor systems. Yield line theory. Torsion. Seismic design. Prerequisite: CE 444.

CE545 - Advanced Steel Design 545-3 Advanced Steel Design. Economical use of high strength steel; behavior and design bolted and welded building connections, plate girders and composite steel-concrete beams; brittle fracture and fatigue; and low-rise and industrial-type buildings. Prerequisite: CE 442.

CE551 - Intro to Finite Elements 551-3 Introduction to Finite Elements in Engineering Applications. (Same as CE 451 and ME 565) An introduction to finite element techniques and computer methods in finite element applications. Theory and structure of algorithms for one-dimensional and multi-dimensional problems. Applications in solid mechanics, structural analysis, groundwater and fluid flow, and heat transfer, projects and presentations. Prerequisite: ENGR 351 or consent of instructor.

CE552 - Theory of Elasticity 552-3 Theory of Elasticity. Stress and strain equations of elasticity; equilibrium equations; compatibility equations; stress functions; applications of elasticity in solving engineering problems in two and three dimensions. Prerequisite: ENGR 350A,B and MATH 305.

CE553 - Theory of Plasticity 553-3 Theory of Plasticity. (Same as ME 513) Criteria for onset of yielding, isotropic and kinematic strain hardening; flow rules for plastic strains; elastic plastic bending and torsion, slip line field theory; plane stress problems; limit analysis. Prerequisite: ENGR 350A,B and MATH 305 or consent of instructor.

CE554 - Experimental Mechanics 554-3 Experimental Mechanics. An introduction of various experimental techniques that are commonly used to determine properties such as deformation, straining, surface contour, etc. The topics to be covered include the principles of strain gage technology, theory of photoelasticity, piezoelectric accelerometer, laser based interferometry, image processing and analysis, and reverse mechanics. The specific areas of practical application for each type of experimentation will be discussed. Prerequisite: ENGR 350A,B.

CE556 - Laminate Composites 556-3 Theory of Laminate Composite Structures. Orthotropic and Anisotropic Materials, Laminated Plate Theory, Ritz Method, Galerkin's Method, bending, buckling and vibration of laminated structures. Prerequisite: ENGR 350A,B and MATH 251.

CE557 - Advanced Mechanics-Materials 557-3 Advanced Mechanics of Materials. (Same as ME 566) Advanced topics in mechanics of materials including: elasticity equations; torsion of non-circular sections; generalized bending including curved beams and elastic foundations; shear centers; failure criteria including yielding, fracture and fatigue; axisymmetric problems including both thick and thin walled bodies; contact stresses; and stress concentration. Prerequisite: ENGR 350A,B.

CE558 - Reliability in Engr Apps 558-3 Reliability in Engineering Applications. An overview of principles and methods for quantifying the uncertainty in planning, design, testing and operation of engineering systems. Topics include probability theory, random variables, multivariate distributions, regression and correlation analyses, Monte Carlo simulations, and Bayesian approaches. Concepts are illustrated with examples from various areas of engineering, with particular emphasis on civil engineering applications. Prerequisite: ENGR 351 or consent of instructor.

CE570 - Sedimentation Engineering 570-3 Sedimentation Engineering. Introduction to the transport of granular sediment by moving fluids; analysis of regional degradation, aggradation and local scour in alluvial channels; investigation of sediment sources, yield and control. Prerequisite: CE 474 or consent of instructor.

CE571 - Water Resources Engr & Mgmt 571-3 Water Resources Systems Engineering and Management. Philosophy of water resources planning; economic, social and engineering interactions related to water quantity; quantitative optimal planning methodologies for the design and operation of hydrosystems; guest lecturers; projects/case studies. Prerequisite: CE 474 or consent of instructor.

CE572 - Advanced Hydraulic Design 572-3 Advanced Hydraulic Design. Design and analysis of stormwater control and conveyance systems, dams, spillways, outlet works, stilling basins, culverts and other complex hydraulic systems. Prerequisite: CE 474 or consent of instructor.

CE573 - Modeling of Hydrosystems 573-3 Modeling of Hydrosystems. Hydraulic and hydrologic modeling; theory and application of common surface and subsurface flow models such as HEC-RAS, HEC-6, FLDWAV, DAMBRK, MODFLOW and MODPATH. Prerequisite: CE 474 or consent of instructor.

CE592A - Spec Invest-Structural Engr 592A-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in Structural Engineering. Restricted to graduate standing. Special approval needed from the instructor.

CE592B - Spec Invest-Hydraulic Engr 592B-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in Hydraulic Engineering. Restricted to graduate standing. Special approval needed from the instructor.

CE592C - Spec Invest-Environmental Engr 592C-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in Environmental Engineering. Restricted to graduate standing. Special approval needed from the instructor.

CE592D - Spec Invest-Geotech Engr 592D-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in Geotechnical Engineering. Restricted to graduate standing. Special approval needed from the instructor.

CE592E - Spec Invest-Fluid Flow 592E-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in Fluid Flow Analysis. Restricted to graduate standing. Special approval needed from the instructor.

CE592F - Spec Invest-Computat Mechanics 592F-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in Computational Mechanics. Restricted to graduate standing. Special approval needed from the instructor.

CE592G - Spec Invest-Composite Material 592G-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in Composite Materials. Restricted to graduate standing. Special approval needed from the instructor.

CE592H - Spec Invest-Stress Analysis 592H-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in Stress Analysis. Restricted to graduate standing. Special approval needed from the instructor.

CE593 - C E Project 593-3 Civil Engineering Project. Advanced project on topics such as case studies, engineering design, testing and analysis methods, computer modeling, or any other topic focusing on engineering practice. Detailed project report is required. Restricted to graduate standing. Special approval needed from the instructor.

CE599 - Thesis 599-1 to 6 Thesis.

CE601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Civil and Environmental Engineering Faculty

Bravo, Rolando, Associate Professor, Ph.D., University of Houston, 1990.

Butson, Gary J., Associate Professor, Emeritus, Ph.D., University of Illinois at Urbana-Champaign, 1981.

Chevalier, Lizette R., Professor and Associate Dean for Undergraduate Education and Outreach, Ph.D., Michigan State University, 1994.

Cook, Echol E., Professor, Emeritus, Ph.D., Oklahoma State University, 1970.

DeVantier, Bruce A., Associate Professor, Ph.D., University of California at Davis, 1983.

Eichfeld, William F., Assistant Professor, M.S., University of Wisconsin at Madison, 1973.

Evers, James L., Associate Professor, Emeritus, Ph.D., University of Alabama, 1969.

Frank, Roy R., Jr., Assistant Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1983.

Hsiao, J. Kent, Professor, Ph.D., University of Utah, Salt Lake City, 2000.

Kalra, Ajay, Assistant Professor, Ph.D., University of Nevada, 2011.

Kassimali, Aslam, Professor and Distinguished Teacher, Ph.D., University of Missouri at Columbia, 1976.

Kolay, Prabir K., Associate Professor, Ph.D., Indian Institute of Technology, Bombay, 2001.

Kumar, Sanjeev, Professor and Chair and Distinguished Teacher, Ph.D., University of Missouri at Rolla, 1996.

Liang, Yanna, Professor, Ph.D., Utah State University, 2006.
Liu, Jia, Assistant Professor, Ph.D., University of Houston, 2014.
Puri, Vijay K., Professor, Ph.D., University of Missouri at Rolla, 1984.
Ray, Bill T., Associate Professor, Emeritus, Ph.D., University of Missouri at Rolla, 1984.
Rubayi, Najim, Professor, Emeritus, Ph.D., University of Wisconsin, 1966.
Sami, Sedat, Professor, Emeritus, Ph.D., University of Iowa, 1966.
Tezcan, Jale, Associate Professor, Ph.D., Rice University, 2005.
Warwick, John J., Professor and Dean, Ph.D., The Pennsylvania State University, 1983.
Yen, Shing-Chung, Professor, Emeritus, Ph.D., Virginia Polytechnic Institute and State University, 1984.

Communication Disorders and Sciences

The major in Communication Disorders and Sciences is part of the Rehabilitation Institute.

The program in Communication Disorders and Sciences has as its objective the training of qualified personnel to aid people who have speech, language, or hearing impairment. The undergraduate curriculum is broad in scope and gives the student the necessary preprofessional background for the clinical-research program offered at the master's level. Both the state of Illinois and national certification require the master's degree. Students who complete the graduate program at the master's level and have certification are qualified for positions in public or private clinics, schools, hospitals, or rehabilitation agencies. In addition, the broad scope of the undergraduate program provides a solid foundation for many graduate professional programs in rehabilitation, such as rehabilitation counseling, behavioral analysis and therapy, and rehabilitation administration.

Communication Disorders and Sciences is dedicated to preparing students for leadership roles in the profession. Students are expected to develop programs that will enhance their individual strengths in light of their professional goals. The undergraduate program permits students to develop significant concentration areas outside of the department while laying the foundation for graduate education.

The undergraduate program is designed to provide the student with sufficient information and experience to determine the advisability of pursuing a graduate degree in Communication Disorders and Sciences. Students choosing not to continue in the profession will find themselves well prepared to enter the job market with a broadly based education or to pursue graduate work in allied rehabilitation professions.

All students are encouraged to plan programs of study to meet the academic and practicum requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association, (10801 Rockville Pike, Rockville, MD, 20852-3279) or the Illinois Professional Educator License with School Support Personnel Endorsement for SLPs: Non-Teaching, or both. Programmatic planning at the undergraduate level will facilitate completion of certification requirements of American Speech-Language-Hearing Association and State of Illinois in conjunction with the master's degree program.

Bachelor of Science Degree in Communication Disorders and Sciences, Preprofessional Program

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
To include: ENGL 101, ENGL 102; CMST 101; MATH 110 or MATH 101; PHYS 101 or CHEM 106; PLB 115 or ZOOL 115; PHIL 308I; HIST 110; AD 101, HIST 201, MUS 103 or THEA 101; HIST 101A, HIST 101B, PHIL 103A, PHIL 103B; ENGL 121 or ENGL 204; POLS 114; PSYC 102; ANTH 202, HIST 202 or SOC 215; HED 101 or KIN 101.	

Degree Requirements	Credit Hours
Major Requirements	49
QUAN 402 or MATH 282	3
PSYC 102, PSYC 211, PSYC 301	10
SOC 108	3
CDS 105, CDS 300, CDS 301, CDS 302, CDS 303, CDS 314, CDS 410, CDS 420, CDS 422, CDS 492, CDS 493	33
Total	127

IL Professional Educator License: Non-Teaching Requirements: EDUC 214, SPED 300, CI 360, CDS 410
 Students interested in the IL PEL: Non-Teaching should contact the academic advisor for Communication Disorders and Sciences in the College of Education and Human Services for appropriate University Core Curriculum and licensure coursework.

Communication Disorders and Sciences Courses

CDS100 - Speech Clinic - Therapy 100-0 to 1 Speech Clinic: Therapy. For students with speech and hearing deviations who need individual help. Special approval needed from the instructor.

CDS104 - Training the Speaking Voice 104-3 Training the Speaking Voice. For those students who desire to improve their voice and articulation.

CDS105 - Intro Communication Disorders 105-3 Introduction to Communication Disorders. A general survey course devoted to a discussion of the various problems considered to be speech and hearing disorders with special emphasis on basic etiological classification schemes and their incidence in the current population. Opportunities for directed observation.

CDS300 - Phonetics 300-3 Phonetics. Instruction in the use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds.

CDS301 - Intro Speech-Lang & Hear Sci 301-3 Introduction to Speech-Language and Hearing Science. An introduction to the science of general speech including the history of research in the field and significant experimental trends. Open to all students.

CDS302 - Voice and Articulation 302-3 Voice and Articulation. A general introduction to the phonological development in children on a normative basis. In addition to introducing the student to the classical studies in articulatory development, this course provides a general exposure to the implications of classical phonetic theory, coarticulatory theory and distinctive features theory as a framework for therapy and research. Physioacoustic parameters of voice quality variables evidenced in verbal communication are also studied. Lectures and demonstrations emphasize basic information necessary to study for the treatment of voice disorders.

CDS303 - Language Development 303-3 Language Development. (Same as CI 413) Presentation of developmental language components including theoretical considerations and terminology related to traditional structural and transformational grammar. The effects of dialect and English as a second language will be expounded. Language analysis and research are discussed and related to the developmental process.

CDS307 - Introduction to Organics 307-3 Introduction to Organics. An introduction to the organic bases of communication disorders. An emphasis will be placed on the foundations of development and teratological events and influences which result in specific communication disorders, and overview of those disorders, and their implications for the individual. Observations as directed. Prerequisite: CDS 314 or consent of instructor.

CDS314 - Anat&Physl Speech & Hear Mech 314-3 Anatomy and Physiology of the Speech and Hearing Mechanism. Structure and function of the speech and hearing mechanism.

CDS328 - CDS & Classroom Teacher 328-3 Communication Disorders and Sciences and the Classroom Teacher. Basic information on communication disorders through exploring etiology, diagnostic, and treatment of school age children with common speech, language and hearing disorders. This course will also provide information on collaboration, and integration of speech-language programs into the school curriculum.

CDS385 - Computer Technology 385-3 Computer Technology in Communication and Fine Arts. An introduction to the basic terminology, concepts and techniques being used in the various areas of education and rehabilitation. A foundation course to prepare students for the impact of computer technology in the professional lives of those who work in the occupational settings represented within the college.

CDS408 - Craniofacial Anomalies 408-3 Communicative Disorders: Craniofacial Anomalies. Development of cleft palate and related anomalies that cause communication disorders. Assessment and intervention of the communication disorders related to these impairments. Prerequisite: Coursework on the normal structure and function of the speech and hearing mechanism.

CDS410 - Multicultural Aspects:CDS 410-3 Multicultural Aspects of Communication Disorders. Students will explore different cultures and communication within these cultures. Emphasis will be placed on the relationship between cultural differences and communication disorders. Review of speech and language disorders in multicultural populations, as well as assessment and intervention strategies for use with this diverse group will be provided. Prerequisite: CDS 302, 303 or consent of instructor.

CDS420 - Intro Audiological Dsrdrs/Eval 420-3 Introduction to Audiological Disorders and Evaluation. Bases of professional field of audiology (orientation, anatomy, and physiology of the auditory system), major disease processes influencing hearing and their manifestations, measurement of hearing loss. Prerequisite: CDS 301 and 314.

CDS422 - Comm Probs-Hearing Impaired 422-3 Communication Problems of the Hearing Impaired. Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: CDS 302, 303, and 420 or equivalents. Special approval needed from the instructor.

CDS450 - Neuroanatomical Basis Hum Comm 450-3 Neuroanatomical Basis of Human Communication. Examination of the central nervous system (brain and spinal cord) as it relates to normal and disordered human communication. Presentation of basic neuroanatomy, common neuropathologies relevant to communication disorders, and strategies in neurogenic problem solving. Prerequisite: CDS 314 or consent of instructor.

CDS460 - Augmentv/Alterntve Comm Syst 460-3 Augmentative and Alternative Communication Systems. An introduction to alternative and augmentative communication systems for non-vocal clients. Discussions include: use of aided and unaided augmentative systems, assessment procedures and training. Prerequisite: CDS 301 or consent of instructor.

CDS485 - Special Topics in CDS 485-1 to 9 (1 to 3 per 700 section number) Special Topics in Communication Disorders and Sciences. Topical presentations of current information on special interests of the faculty not otherwise covered in the curriculum. Designed to promote better understanding of recent developments related to disorders of verbal communication. Open to advanced undergraduate and graduate students. Special approval needed from the instructor.

CDS491 - Individual Study 491-1 to 9 (1 to 3 per semester) Individual Study. Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with the instructor, with consent of the chair. Special approval needed from the chair.

CDS492 - Diagnostic Procedures:CDS 492-3 Diagnostic Procedures in Communication Disorders. A course devoted to discussion of the role of the speech and hearing clinician as a differential diagnostician. Special emphasis is placed on correlating information obtained from the oral-peripheral examination, articulation and language evaluation, audiometric and case history information in constructing the initial evaluation report. Special approval needed from the instructor.

CDS493 - Basic Clinical Practice 493-3 Basic Clinical Practice. Current information regarding diagnostic, treatment and documentation procedures in speech-language pathology will be presented through active observation in the clinical environment and classroom instruction. Special approval needed from the instructor.

CDS500 - Research Design in CDS 500-3 Research Design in Speech Pathology and Audiology. Evaluation of the strategies and procedural tactics of behavioral research.

CDS505 - Phonological Development 505-3 Phonological Development and Disorders. An introductory discussion of the important linguistic, physiological and acoustic variables which affect language production at the segmental and supra-segmental level of language; and an historical examination of the growth and development of distinctive feature systems from 1920 to the present. Concentration upon the mathematical, logical, physiological and acoustic assumptions of the various matrices, which have been developed. Prerequisite: CDS 302 or equivalent. Special approval needed from the instructor.

CDS507 - Language Disorders 507-3 Language Disorders. Discussion of the application of current theoretical implications and research findings to the syntactically impaired. This course emphasizes diagnostic and therapeutic models applicable to language disorders. Opportunities for research and clinical experience with young children displaying developmental language problems will be provided. Required for Master's students. Prerequisite: CDS 303 or consent of instructor.

CDS510 - Stuttering 510-3 Stuttering: Behavior Assessment and Therapy. Explores the assumptions underlying diagnosis and assessment. Procedures specific to the differential assessment of fluency failures are examined, evaluated and related to therapeutic strategies and the tactics of behavior change. Special approval needed from the instructor.

CDS512 - Voice Disorders 512-3 Voice Disorders. An intensive study of the variables of air stream modulation resulting from impaired structures and function of head and neck.

CDS517 - Comm Impair Birth-3 517-3 Seminar: Language Disorders Birth to Three. In this course we will identify a typical physical growth, cognitive and motor functions and other areas of development that affect communication in children ages 0 to three years. It will also infuse cultural awareness, and provide information on working with families, peer professionals, processes of teaming, referral and collaboration. Prerequisite: CDS 303 or equivalent or consent of instructor.

CDS518 - Prob Comm/Process Aging 518-3 Problems of Communication and the Process of Aging. Review problems of communication related to the aging process and examine relevant diagnostic and therapeutic techniques.

CDS519 - Medical SLP & AAC 519-3 Medical Speech-Language Pathology and Augmentative Communication. Disorders of communication that often occur in medical settings, including those related to traumatic brain injury and laryngectomy. Also focuses on persons with severe communication impairment and augmentative/alternative communication as a broad category of intervention procedures for this client population.

CDS533 - Sem: Speech & Audio Percep 533-3 to 6 (3,3) Seminar: Speech and Auditory Perception. Special problems in hearing and communication science. Students may choose from a wide range of topics: speech acoustic, kinesthetic and vibrotactile perception, voiceprint identification, synthetic and compressed speech, digital speech, electro stimulation of hearing, and neurophysiological basis for perception. One or more topics are pursued in depth. The seminar may be repeated for a total of six hours with different content. Special approval needed from the instructor.

CDS540 - Neurogen Disorder Comm I 540-3 Neurogenic Disorders of Communication I. Focus on aphasia and neurolinguistic science. A clinically oriented presentation of the aphasia, and related CNS language disturbances, will be integrated with an introduction to the broader field of neurolinguistics.

Clinical aspects will focus on assessment of rehabilitation approaches in aphasia and related disorders. Other topics include cortical language representation, hemispheric functions (general), and review of basic neurolinguistic literature. Prerequisite: CDS 450 or consent of instructor.

CDS541 - Neurogenics II 541-3 Neurogenic Disorders of Communication II. Focus on the role of the pyramidal and extrapyramidal motor systems in speech production and speech disorders related to abnormalities in these motor systems. Discussion of the neurological basis and clinical management of the dysarthrias and verbal apraxia. Prerequisite: CDS 540 or consent of instructor.

CDS544 - CompTech:PhonDsordChld 544-1 to 6 Seminar: Computer Techniques for Phonological Disorders in Children. A laboratory based examination of the distinctive features used by children in the normal and abnormal acquisition of phonology. Discussions and practical projects are developed to further the student's understanding of current assumptions concerning the acoustical aspects of abnormal phonation and speech sound production. Group projects are developed using computer based speech sound digitizing equipment. Course credit is based upon the time involved and the complexity of the topic. Digital software and laboratory examination topics are varied to meet individual student needs. May be repeated as topics vary to a total of 6 hours.

CDS550 - Pro Training Seminar 550-1 to 15 Professional Training Seminar. A special seminar that provides doctoral students the opportunity to prepare and present papers on various aspects of speech-language pathology and audiology. Liberal discussion will follow each paper. All doctoral students are required to enroll for one credit each semester until admitted to candidacy. Graded S/U only. Only four credit hours are counted toward the Ph.D. degree.

CDS590 - Readings 590-1 to 4 (1 to 2, 1 to 2) Readings in Speech-Language Pathology and Audiology. Supervised and directed readings in specific areas of speech pathology and in audiology. Maximum of two hours counted toward Master's degree. Special approval needed from the chair.

CDS593 - Research Problems 593-1 to 3 Research Problems in Speech-Language Pathology and Audiology. Individual work upon selected problems for research. Special approval needed from the chair.

CDS594 - Adv Clinic: Prac Therapy 594-1 to 18 (1 to 3 per semester) Advanced Clinical Practice Therapy/SLP. Active, supervised participation in the clinical process with emphasis on individualized assessment, treatment, counseling and documentation procedures. Overview of clinical practice in various settings, federal legislation and standards of ethical practice. Special approval needed from the instructor.

CDS595 - Clinic Seminar 595-1 Clinic Seminar. Taken concurrently with CDS 594. Topics differ each semester and are related to clinical practice, including those necessary for successful completion of advanced clinical practicum, internship/student-teaching, clinical fellowship and professional credentialing. Fulfills the reading instruction requirement for the Illinois Professional Educator License for speech-language pathologists. Partially fulfills the requirements for ASHA certification.

CDS596 - Adv Clinic: Hear Diagnostics 596-1 Advanced Clinical Practice: Hearing Diagnostics. Advanced clinical practice in hearing diagnostics. Emphasis will be placed on diagnostic techniques used in the preparation of basic and advanced audiological reports. Graded S/U only. Special approval needed from the instructor.

CDS597 - Public School Practicum 597-12 Public School Practicum. Public School internship provides the student with clinical experience under the supervision of a school-based certified speech-language pathologist. The student should receive experience with the disorders of fluency, articulation, voice, organics, language and hearing. The student should also gain administrative experience. Prerequisite: 150 to 200 clock hours. Special approval needed from the instructor. Lab fee: \$100.

CDS598 - Intern Comm Disorders 598-6 to 18 Internship Communication Disorders. Internship in a selected medical center, hospital clinic, community agency, or private clinic. The internship provides the student with an intensive, professional, clinical experience under supervision of qualified and certified resident staff members. Special approval needed from the instructor.

CDS599 - Thesis 599-1 to 6 Thesis.

CDS600 - Dissertation 600-1 to 32 (1 to 16 per semester) Dissertation.

CDS601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

CDS699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Communication Studies

The Department of Communication Studies, formerly the Department of Speech Communication, offers courses in the history, theory and application of communication. These courses reflect liberal arts, humanities and social science traditions as approaches to theory and application.

The department also sponsors co-curricular activities in public speaking, debate, forensics, performance studies (oral interpretation), and public relations, all of which are open to non-majors.

English is the language of instruction in the Department of Communication Studies and proficiency in written and oral English is required of all students in Communication Studies. To meet the requirements for a major in the Department of Communication Studies a student must demonstrate the following basic skills: the ability to deliver effective oral public presentations; the ability to write clear, correct English prose; the ability to communicate effectively at the interpersonal level as well as in groups; and the ability to understand and apply communication theory and research.

These communication competencies may be demonstrated by completing the major program and any one of the specializations described below and by receiving no lower than a C grade in courses listed in the required core and as required in the student's chosen specialization. Under certain circumstances, a student may elect to demonstrate a competency by passing a proficiency examination administered by the Department of Communication Studies.

Bachelor of Science Degree in Communication Studies, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	6-11
Includes: one year of foreign language and two writing intensive courses chosen from those listed in the required curriculum specializations below.	
Requirements for Major in Communication Studies	42-43
Required Core Courses	9
Communication theory: CMST 230 Communication skills: three hours of public communication selected from CMST 221, CMST 325, CMST 326 or CMST 370; and 3 hours of interpersonal communication	

Degree Requirements	Credit Hours
selected from CMST 261, CMST 262, CMST 371 or CMST 383.	
Required Curriculum Specialization (see below)	33-34
Electives and Minor	27-31
Intercultural Communication Specialization	33
<p>For students interested in communication topics and practices as they occur in social, cultural, and cross-cultural settings, verbal and nonverbal transaction and exchange at the interpersonal, group, organizational, and public levels, and the challenges of cultural diversity at home and abroad; domestic and international careers in business, industry, teaching, and government with a focus on intercultural understanding, consensus, and appreciation. Required: CMST 262, CMST 301I (or CMST 341), CMST 361, CMST 440, CMST 441, CMST 448; and fifteen hours selected from any other communication studies courses. Electives: AFR 215, AFR 330; ANTH 202, ANTH 301, ANTH 304, ANTH 370, ANTH 410I, ANTH 410L, ANTH 410N, ANTH 410O; HIST 361, HIST 365; JRNL 306I; LING 200, LING 201, LING 415; MKTG 336, MKTG 435; POLS 352I, POLS 373; PSYC 307, PSYC 323; RTD 467; SOC 215, SOC 423, SOC 424, SOC 435, SOC 437.</p>	
Interpersonal Communication Specialization	33
<p>For students interested in topics of communication in interpersonal relationships, language in everyday interactions, group communication dynamics, and nonverbal and intercultural aspects of communication; and careers in communication skills training, interviewing, communication research, conflict management, and employee or client relations. Required: CMST 261, CMST 262, CMST 301I (or CMST 341), CMST 361, CMST 463; and 18 hours selected from any other communication studies courses.</p>	
Organizational Communication Specialization	33
<p>For students interested in a broad spectrum of communication topics in the context of the organization including, but not limited to, compliance-gaining, superior-subordinate interaction, communication audit methods, organizational networks, organizational climate and culture, conflict resolution, impact of new communication technology, and information flow. Required: CMST 280, CMST 281, CMST 326, CMST 380, CMST 383, CMST 480, CMST 483; 12 hours selected from any other communication studies courses.</p>	

Degree Requirements	Credit Hours
Performance Studies Specialization	34
<p>For students interested in theatrical and everyday performance and the oral interpretation of literature, and in careers in performance, writing-as-performance, and public presentation from business to the arts. Required: CMST 370, CMST 371, CMST 471, CMST 472; six hours selected from CMST 474, CMST 475, CMST 476; at least one hour selected from CMST 390F or CMST 490F; and 15 hours selected from any other communication studies courses.</p>	
Persuasive Communication Specialization	33
<p>For students interested in public and political discourse, argumentation, rhetoric, social influence and media, careers in law, politics, sales, corporate and public advocacy, and selected areas in business and mass media. Required: CMST 221, CMST 325, CMST 326, CMST 411; six hours selected from CMST 310, CMST 382, CMST 412, CMST 413, CMST 421 (3,3), CMST 451; and 15 hours selected from any other communication studies courses.</p>	
Public Relations Specialization	33
<p>For students interested in public relations: the study of internal and/or external communication between an organization or client and its publics. Includes media relations, writing for mass media, research, case studies, and planning of communication campaigns. Required: CMST 280, CMST 281, CMST 326, CMST 381, CMST 382, CMST 481, JRNL 310 and JRNL 335, JRNL 311 or JRNL 302, three hours of CMST 390H or CMST 494H, three hours from JRNL, RTD or CMST 301I (or CMST 341), CMST 390H, CMST 482, CMST 490H, CMST 493, and CMST 494H. Minor or cognate study in related areas: Fifteen hours in a single department or related field of study beyond the University Core Curriculum and required courses. A cognate study will only be allowed if another unit on campus does not offer a minor and the student wishes to focus in that area. Cognate study must be approved by a member of the Public Relations Faculty.</p>	
Electives	10-26
<p>(Electives for majors specializing in Public Relations include 15 hours of coursework in a minor or cognate study in a related area.)</p>	
Total	120

Communication Studies Minor

A minor in Communication Studies consists of a minimum of 15 hours (in addition to CMST 101), which must include nine hours at the 300- or 400-level.

Communication Studies Courses

CMST100 - Communication Studies Workshop 100-3 Communication Studies Workshop. A workshop in debate, oral interpretation, or public speaking for secondary school seniors interested in intensive study in one or more of these areas. Special approval needed from the instructor.

CMST101 - Intro:Oral Communication 101-3 Introduction to Oral Communication: Speech, Self and Society. (University Core Curriculum) [IAI Course: C2 900] This course provides theory and practical application relevant to students' development of basic oral communication competencies appropriate to a variety of contexts as situated in a culturally diverse world.

CMST102 - Speaking with Confidence 102-1 Speaking with Confidence: Overcoming Communication Apprehension. Designed for students with high speech anxiety that are reluctant to enroll in Communication Studies 101 or are currently enrolled in 101. This course provides exercises and opportunities to significantly lessen and control communication apprehension. Pass/Fail only.

CMST201 - Performing Culture 201-3 Performing Culture. (University Core Curriculum) A critical examination of human communication - from everyday conversation to cultural formation - as performance. Lecture and discussion format with consideration of primary texts drawn from conversational transcripts, multicultural literature and popular culture.

CMST221 - Advanced Public Speaking 221-3 Advanced Public Speaking. The components of effective speech with preparation and presentation of several types of speeches. Prerequisite: CMST 101 or consent of instructor.

CMST230 - Foundations of Communication 230-3 Foundations of Communication. This course provides an expansive survey of communication concepts that foster awareness of self and others. Students will explore how understanding communication can help effectively navigate everyday interactions in personal and professional contexts. This course will enhance understandings of identity, relationships, social inequality, media representation, and organizational norms.

CMST241 - Comm in Global Workplace 241-3 Communication Skills in the Global Workplace. This course provides practical application for intercultural theory beyond the classroom, within the context of globalization. Students will learn how intercultural communication can prepare him/her for life beyond college, including workplace diversity, career preparation, international business contexts and more. Assignments will culminate in a portfolio that will prepare students for their future in an increasingly globalized world.

CMST261 - Small Group Communication 261-3 Small Group Communication. Introduction to small group communication and the small group process. Special emphasis given to problem-solving discussion groups.

CMST262 - Interpersonal Communication 262-3 Interpersonal Communication. Theoretical approaches and contemporary research on patterns of interpersonal communication in romantic, friendship, family, and work relationships. Emphasis on developing skills for analyzing interpersonal processes through close description and interpretation. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum requirement for communication studies majors.

CMST280 - Business & Professional Comm 280-3 Business and Professional Communication. A survey of communication theory pertaining to business and professional settings. Provides practice applicable to interviews, conference briefings, and presentation techniques. Prerequisite: CMST 101.

CMST281 - Intro to Public Relations 281-3 Introduction to Public Relations. [IAI Course: MC 913] Introduction to public relations theories, philosophies and principles for agency, business, governmental

and not-for-profit organizations. Historical perspectives, current and future trends, professional associations and career opportunities explored.

CMST301I - Comm Across Cultures 301I-3 Communication Across Cultures. (University Core Curriculum) This course provides an introduction to communication between/among people from different cultures, focusing on the application of intercultural communication theory and research. Class assignments and exercises examine everyday encounters with individuals from different races, ethnicity, religions, gender, ages, sexual orientations and physical abilities. Credit cannot be earned in both CMST 301I and CMST 341.

CMST310 - Speechwriting 310-3 Speechwriting. Advanced study and practice of the principles of composition, revision and delivery of effective public speeches. Satisfies the CoLA Writing-Across-the-Curriculum requirement for communication studies majors. Prerequisite: CMST 221 or consent of instructor.

CMST325 - Argumentation & Debate 325-3 Argumentation and Debate. Through the study of argument, evidence, reasoning, and oral advocacy this course seeks to ensure competence in the ascertainment of truth by investigation and research and the establishment of truth through proof. The ultimate rationale for the course is the discovery and support of intelligent decisions. Prerequisite: CMST 101 or consent of instructor; CMST 221 recommended.

CMST326 - Persuasion 326-3 Persuasion. The means of influencing individuals and groups through communication. Emphasizes the shaping of others' values, beliefs, attitudes and behavior. Provides theoretical information about and practice in persuasive speaking for sources and targets of persuasion. Satisfies the CoLA Writing-Across-the-Curriculum requirement for communication studies majors.

CMST341 - Intro Intercultural Comm 341-3 Introduction to Intercultural Communication. (Same as LING 341) Examination of the elements and structure of intercultural and transracial communication in the United States. Designed to analyze and describe the interactions between social perception and expression as manifest in verbal and nonverbal behavior. Emphasis on the functional communication of minority groups. Prerequisite: CMST 101 or CMST 262 or consent of instructor. Credit cannot be earned in both CMST 301I and CMST 341.

CMST342 - Comm & Popular Culture 342-3 Communication and Popular Culture. Students will explore the production, consumption, and dissemination of popular culture in the global marketplace. They will apply intercultural and cultural studies theories and concepts to popular culture texts such as film, television, music, advertising, gaming, second life, Facebook, and Twitter. The examination of popular culture will be centered around how popular culture influences understanding of identity/ies, identity differences, intercultural communication, and intercultural relationships. This course will enhance self-reflexivity, understanding, and knowledge concerning the implications of popular culture in our everyday lives and within intercultural interactions.

CMST361 - Nonverbal Communication 361-3 Nonverbal Communication. A survey of the nonverbal factors that influence the communicative interaction among persons. Review research findings and conduct projects germane to nonverbal communication. Readings, discussions, and research projects. Prerequisite: CMST 262 or consent of instructor.

CMST362 - Comm & Social Process 362-3 Communication and Social Process. Introduction to the phenomenology of human communication and social process. Analysis and description of interpersonal communication in the development and operation of human communities. Special emphasis is given to the nature of persons, consciousness, and communication exchange in society.

CMST370 - Performance of Literature 370-3 Performance of Literature. Theory and practice in performance as a method for literary study, with emphasis on the student as performer. Prerequisite: CMST 201 or consent of instructor.

CMST371 - Storytelling & Oral Tradition 371-3 Storytelling and the Oral Tradition. Theory and practice in the art of storytelling with emphasis upon practical application, source materials, and historical and ethnic backgrounds.

CMST380 - Intro Leadership & Org Comm 380-3 Introduction to Leadership and Organizational Communication. Introduction to basic concepts, theories, and practices relevant to the understanding of communication in leadership positions and organizational contexts. Provides a communicatively based definition of leadership and formal organization and explores historical and contemporary theories pertaining to individual-organizational relationships.

CMST381 - Public Relations in Practice 381-3 Public Relations in Practice. Application of public relations theory and principles through training and practice in the development of public relations writing and production skills including message construction and delivery, verbal, nonverbal, and visual production work and special events components. Satisfies the CoLA Writing-Across-the-Curriculum requirement for communication studies majors. Prerequisite: CMST 281 with a grade of C or better or consent of instructor.

CMST382 - Research Methods Public Comm 382-3 Research Methods in Public Communication. An introductory survey of methods and techniques of audience analysis and public opinion research. Introduction to the design of research tools, sample selection, interviewing, and data analysis.

CMST383 - Interviewing 383-3 Interviewers and Interviewing. Planning, conducting, and analyzing interviews with emphasis on roles of interviewer and respondent in professional and organizational communication settings. Study of factors affecting accuracy, openness, and goal attainment in use of interview methods for evaluation and research. Individual and small group projects with selected aspects of interviewing.

CMST390A - Appl Comm-Comm Pedagogy 390A-1 to 6 Applied Communication-Communication Pedagogy. Supervised individual and group performance in various communication arts. Emphasis on the practical application of communication skills communication pedagogy. May be repeated for credit up to a maximum of six hours total from 390, 490 and 491 toward degree requirements. Special approval needed from the instructor.

CMST390B - Applied Comm-Debate 390B-1 to 6 Applied Communication-Debate. Supervised individual and group performance in various communication arts. Emphasis on the practical application of communication skills in debate. May be repeated for credit up to a maximum of six hours total from 390, 490 and 491 toward degree requirements. Special approval needed from the instructor.

CMST390C - Applied Comm-Intercultrl Comm 390C-1 to 6 Applied Communication-Intercultural Communication. Supervised individual and group performance in various communication arts. Emphasis on the practical application of communication skills in intercultural communication. May be repeated for credit up to a maximum of six hours total from 390, 490 and 491 toward degree requirements. Special approval needed from the instructor.

CMST390D - Applied Comm-Interprsnl Comm 390D-1 to 6 Applied Communication-Interpersonal Communication. Supervised individual and group performance in various communication arts. Emphasis on the practical application of communication skills in interpersonal communication. May be repeated for credit up to a maximum of six hours total from 390, 490 and 491 toward degree requirements. Special approval needed from the instructor.

CMST390E - Applied Comm-Organizational Cm 390E-1 to 6 Applied Communication-Organizational Communication. Supervised individual and group performance in various communication arts. Emphasis on the practical application of communication skills in organizational communication. May be repeated for credit up to a maximum of six hours total from 390, 490 and 491 toward degree requirements. Special approval needed from the instructor.

CMST390F - Applied Comm-Performnce Stdies 390F-1 to 6 Applied Communication-Performance Studies. Supervised individual and group performance in various communication arts. Emphasis on the practical application of communication skills in performance studies. May be repeated for credit up to a maximum of six hours total from 390, 490 and 491 toward degree requirements. Special approval needed from the instructor.

CMST390G - Applied Comm-Persuasive Comm 390G-1 to 6 Applied Communication-Persuasive Communication. Supervised individual and group performance in various communication arts. Emphasis on the practical application of communication skills in persuasive communication. May be repeated for

credit up to a maximum of six hours total from 390, 490 and 491 toward degree requirements. Special approval needed from the instructor.

CMST390H - Applied Comm-Public Relations 390H-1 to 6 Applied Communication-Public Relations. Supervised individual and group performance in various communication arts. Emphasis on the practical application of communication skills in public relations. May be repeated for credit up to a maximum of six hours total from 390, 490 and 491 toward degree requirements. Special approval needed from the instructor.

CMST401 - Comm Theories & Models 401-3 Communication Theories and Models. An advanced examination of the purposes and processes of constructing and using theories and models in communication research. Students critically analyze existing communication theories from both social scientific and interpretive paradigms in order to explicate and evaluate their implicit and explicit assumptions about human being, knowledge, and value. For graduate students and advanced undergraduates. Satisfies the CoLA Writing-Across-the-Curriculum requirement for communication studies majors. Prerequisite: CMST 230 or graduate standing.

CMST411 - Rhetorical Criticism 411-3 Rhetorical Criticism. Designed to develop the student's ability to criticize public discourse, including speeches, written works and the mass media. Satisfies the CoLA Writing-Across-the-Curriculum requirement for communication studies majors.

CMST412 - Environmental Rhetoric 412-3 Environmental Rhetoric. An exploration of rhetorical structures and strategies in environmental policy, activism and public discourse. This course traces the significant contributions rhetoric and public debate have made in the struggle to protect environments from excessive industrial and commercial exploitation. A lecture, reading and discussion course.

CMST413 - Visual Rhetoric 413-3 Visual Rhetoric. An exploration of visual messages in public discourse and persuasive communication. This course offers tools for doing rhetorical criticism of visual messages, identifying similarities and differences between the analysis and production of verbal and visual persuasion. A lecture, readings, and discussion course.

CMST415 - Gender Sexuality & Comm 415-6 (3,3) Topics in Gender, Sexuality and Communication. (Same as WGSS 415) An exploration of advanced theories and research in gender and sexuality from communication perspectives. Course may be repeated when topics vary.

CMST416 - Black Feminist Thought 416-3 Black Feminist Thought as Theory and Praxis. (Same as AFR 416 and WGSS 416) Explore the roots, contemporary manifestations, and current embodiments of Black feminist thought. Explore the works of Black women to engage in critical thinking and thoughtful dialogue that positions the valuable knowledge, experiences and perspectives of women of color at the center of inquiry while simultaneously discovering spaces for multicultural alliances. Prerequisite: CMST 301I or CMST 341 or consent of instructor or graduate standing.

CMST421 - Studies in Public Address 421-3 to 9 (3,3,3) Studies in Public Address. Critical studies of speakers and issues relevant to social and political movements dominant in national and international affairs. A lecture, reading and discussion course. Students may repeat enrollment to a total of nine hours.

CMST435 - Topics in Performance Studies 435-3 to 6 (3,3) Topics in Performance Studies. An exploration of advanced theories and techniques in performance studies. Topics vary and are announced in advance. Students may repeat enrollment in the course, since the topics change. Lecture, discussion, class projects.

CMST440 - Language Culture Comm 440-3 Language, Culture, and Communication. Study of language in use in social interactions in various cultural and communicative contexts. Topics include components of language, language change and diversity, speech acts, conversational structure, dialects, gender and language, bilingual and multilingual cultures, child language acquisition, and language use in institutional contexts. Prerequisite: CMST 301I or CMST 341, or consent of instructor or graduate standing.

CMST441 - Advanced Intercultural Comm 441-3 Advanced Intercultural Communication: Theory and Practice. Advanced study of intercultural communication in domestic and global intercultural contexts. Course incorporates intercultural communication research with specific focus on application theory in

professional contexts and in service of public advocacy and/or social justice. Prerequisite: CMST 301I (or CMST 341) or consent of instructor or graduate standing.

CMST442 - Psych of Human Communication 442-3 Psychology of Human Communication. Nature, development, and functions of verbal and nonverbal behavior; application of psychology theories and research to the communication process in individuals and groups. Emphasis on the systemic nature of communicative behavior.

CMST443 - General Semantics 443-3 General Semantics. Formulations from the works of Alfred Korzybski and from neo-Korzybskian interpreters are presented. General semantics is discussed as an interdisciplinary approach to knowledge. Relationships are made to contemporary problems in human affairs.

CMST444 - Studies Language Acquisition 444-3 Studies in Language Acquisition. Research in and theories of the development of verbal and nonverbal language with attention to the maturational process. Includes investigation of social, phonological, syntactical, and semantic correlates of communication development. Appropriate for advanced students interested in working with or conducting research involving children.

CMST445 - Conversational Performance 445-3 Conversational Performance. Analysis of performance acts within everyday interaction: stories, jokes, laughter, teasing, etc. Application of theories of play, metacommunication and framing. Re-performance of recorded, transcribed conversations as method of exploring aesthetic dimensions of communication. Prerequisite: 9 hours of communication studies courses or consent of instructor or graduate standing.

CMST446 - Soc: Language Discourse & Sign 446-3 Sociology of Language Discourse and Signs. Introduction to sociological semiotics, especially structuralism and post-structuralism. Reference to French theorists such as Barthes, Baudrillard, Bourdieu, Certeau, Deleuze and Guattari, Greimas, Group Mu, Lacan, Lyotard, and Perelman. Emphasis on the practice of discourse, language, and signs as a model for research in the human science of communicology.

CMST447 - Comm Race and Ethnicity 447-3 Communicating Race and Ethnicity. (Same as AFR 447) Via intercultural theories and methods, this course explores histories, relationships, interactions and recent events by positioning racial and ethnic perspectives at the center of inquiry. The course critically examines the complexities of race, racism and ethnicity by focusing on how people communicate across racial and ethnic differences in different contexts. Prerequisite: CMST 301I or CMST 341, or consent of instructor or graduate standing.

CMST448 - Intercultural Training 448-3 Intercultural Training. Introduction to communication theories and practices informing the training of individuals and groups anticipating extensive interactions with persons from differing cultural communities. The course provides content and learning opportunities aimed toward the design, development, and evaluation of effective, ethical culture-specific and culture-general intercultural training programs. Prerequisite: CMST 341 or CMST 301I or consent of instructor or graduate standing.

CMST451 - Political Communication 451-3 Political Communication. (Same as POLS 418) A critical review of theory and research which relate to the influence of communication variables on political values, attitudes, and behavior.

CMST460 - Small Group: Theory & Research 460-3 Small Group Communication: Theory and Research. A critical examination of small group theory and research in communication studies. Emphasis is given to the development of principles of effective communication and decision-making in the small, task-oriented groups. Prerequisite: CMST 261 or consent of instructor or graduate standing.

CMST461 - Lab-Interpersonal Comm I 461-3 Laboratory in Interpersonal Communication I. Interpersonal communication is studied as human encounter. The philosophy and theoretical bases of existential phenomenological approaches to human communication are discussed. Projects are evolved by small groups that contribute to the understanding of human communication.

CMST463 - Interpersonal Conflict 463-3 Interpersonal Conflict. Study of sources, patterns, and outcomes of conflict in interpersonal relationships. Emphasis on interactive, systems-level analysis

of naturally-occurring conflict episodes. Practice in managing conflicts, reframing, negotiation, and mediation. Prerequisite: CMST 262 or consent of instructor or graduate standing.

CMST464 - Compassionate Communication 464-3 Compassionate Communication. Study and practical training in Nonviolent Communication and similar approaches to more effective inter- and intrapersonal communication. Using real-life experiences from political encounters and interpersonal conflicts to inner dialogue, this class offers a way to deepen peaceful connection and understanding with ourselves and others through honesty, empathy, and being "fully present" in the moment. Special approval needed from the instructor.

CMST465 - Philosophy of Communication 465-3 Philosophy of Communication. An introduction to philosophical approaches to the study of communicative interaction. Topics include the relation of meaning and conceptual structures to bodily experience and the interpretative nature of communicative interaction.

CMST471 - Prose Fiction in Performance 471-3 Prose Fiction in Performance. Study of prose fiction through analysis and individual performance. Satisfies the CoLA Writing-Across-the-Curriculum requirement for communication studies majors. Prerequisite: CMST 370 or consent of instructor or graduate standing.

CMST472 - Poetry in Performance 472-3 Poetry in Performance. The study of poetic form through analysis and performance. Prerequisite: CMST 201, CMST 370 or consent of instructor or graduate standing.

CMST473 - Performance Ethnography 473-3 Performance Ethnography. An exploration of culture, ritual, narrative, community and personal identity as performance. Readings, field work and assignments focus on performance ethnography, communicative dimensions of performance and performance epistemology. Prerequisite: six hours of performance studies or consent of instructor or graduate standing.

CMST474 - Staging Literature 474-3 Staging Literature. Theory and practice of staging literary texts with emphasis on adaptation and directing. Prerequisite: CMST 370 or CMST 371 or consent of instructor or graduate standing.

CMST475 - Production Texts & Contexts 475-3 to 6 (3,3) Production Texts and Contexts. Advanced study related to theoretical and practical issues in performance staging with special emphasis on textual production, scripting, social contexts and performance practices. May be repeated for a total of six hours. Prerequisite: 6 hours of performance studies courses or consent of instructor or graduate standing.

CMST476 - Writing as Performance 476-3 Writing as Performance. An examination of the practical and theoretical links between composition and performance. Lectures, reading and assignments focus on performance as a means and an end to creative writing. Satisfies the CoLA Writing-Across-the-Curriculum requirement for communication studies majors.

CMST480 - Dynamics Organizational Comm 480-3 Dynamics of Organizational Communication. Exploration of the communicative constitution of organizations, including the role that artifacts and stakeholder attitudes play in the production of meaning and interpretation of organizational events and practices. Uses case studies and individual research into selected aspects of organizational communication to teach principles. Prerequisite: CMST 380, with a minimum grade of C, graduate standing, or consent of instructor.

CMST481 - PR Cases & Campaigns 481-3 Public Relations Cases and Campaigns. Advanced course in public relations case analysis and campaign planning. Students critique public relations campaigns created by various profit, nonprofit and agency organizations. Students also design and implement public relations campaigns from problem identification through evaluation stages. Satisfies the CoLA Writing-Across-the Curriculum requirement for communication studies majors. Prerequisite: CMST 381 and 382 with a grade of C or better or consent of instructor.

CMST482 - PR in Sports/Recreation 482-3 Public Relations in Sports and Recreation. Explores the role of public relations within sports and recreation organizations and the relationship between

these industries and the media. Students will plan and conduct a fund-raising event, attend athletic competitions, and learn about careers in the sports and recreation fields.

CMST483 - Studies in Organizational Comm 483-3 Studies in Organizational Communication. Study of communication systems and behaviors within organizations and their external environments. Considers relevance of communication to management operations, organizational culture, employee morale, networks, superior-subordinate relations, production, and organizational climates. Individual research into selected aspects of organizational communication. Students may repeat enrollment in the course, as the topic varies. Prerequisite: CMST 480, with a minimum grade of C, graduate standing, or consent of instructor.

CMST484 - Social Media & Digital Comm 484-3 Social Media and Digital Communication. Advanced application of contemporary theories in communication studies, particularly those related to principles of rhetoric and persuasion, in digitally mediated environments. Course topics cover the generation, management, and consumption of digital communication within social media and other Web platforms. Includes writing content strategy plans and study of tools used to curate, analyze, and interpret digital documents and information.

CMST490A - Comm Practicum-Pedagogy 490A-1 to 6 Communication Practicum-Communication Pedagogy. A supervised experience using communication skills. Emphasis on the development of performance skills in communication pedagogy. May be repeated for credit. Undergraduates limited to a total of six hours from 390, 490, and 491 and graduate students to three to be counted toward degree requirements. Prerequisite: twelve hours of communication studies. Special approval needed from the instructor.

CMST490B - Comm Practicum-Debate 490B-1 to 6 Communication Practicum-Debate. A supervised experience using communication skills. Emphasis on the development of performance skills in debate. May be repeated for credit. Undergraduates limited to a total of six hours from 390, 490, and 491 and graduate students to three to be counted toward degree requirements. Prerequisite: twelve hours of communication studies. Special approval needed from the instructor.

CMST490C - Comm Practicum-Intercultl Comm 490C-1 to 6 Communication Practicum-Intercultural Communication. A supervised experience using communication skills. Emphasis on the development of performance skills in intercultural communication. May be repeated for credit. Undergraduates limited to a total of six hours from 390, 490, and 491 and graduate students to three to be counted toward degree requirements. Prerequisite: twelve hours of communication studies. Special approval needed from the instructor.

CMST490D - Comm Practicum-Interpersonal 490D-1 to 6 Communication Practicum-Interpersonal Communication. A supervised experience using communication skills. Emphasis on the development of performance skills in interpersonal communication. May be repeated for credit. Undergraduates limited to a total of six hours from 390, 490, and 491 and graduate students to three to be counted toward degree requirements. Prerequisite: twelve hours of communication studies. Special approval needed from the instructor.

CMST490E - Comm Practicum-Organizational 490E-1 to 6 Communication Practicum-Organizational Communication. A supervised experience using communication skills. Emphasis on the development of performance skills in organizational communication. May be repeated for credit. Undergraduates limited to a total of six hours from 390, 490, and 491 and graduate students to three to be counted toward degree requirements. Prerequisite: twelve hours of communication studies. Special approval needed from the instructor.

CMST490F - Comm Practicum-Perf Studies 490F-1 to 6 Communication Practicum-Performance Studies. A supervised experience using communication skills. Emphasis on the development of performance skills in performance studies. May be repeated for credit. Undergraduates limited to a total of six hours from 390, 490, and 491 and graduate students to three to be counted toward degree requirements. Prerequisite: twelve hours of communication studies. Special approval needed from the instructor.

CMST490G - Comm Practicum-Persuasive Comm 490G-1 to 6 Communication Practicum-Persuasive Communication. A supervised experience using communication skills. Emphasis on the development of

performance skills in persuasive communication. May be repeated for credit. Undergraduates limited to a total of six hours from 390, 490, and 491 and graduate students to three to be counted toward degree requirements. Prerequisite: twelve hours of communication studies. Special approval needed from the instructor.

CMST490H - Comm Practicum-Public Relation 490H-1 to 6 Communication Practicum-Public Relations. A supervised experience using communication skills. Emphasis on the development of performance skills in public relations. May be repeated for credit. Undergraduates limited to a total of six hours from 390, 490, and 491 and graduate students to three to be counted toward degree requirements. Prerequisite: twelve hours of communication studies. Special approval needed from the instructor.

CMST491 - Independent Study in Comm 491-1 to 3 Independent Study in Communication. Readings, creative projects, or writing projects focusing on a theoretical study of communication. The independent study should normally be completed in one semester under the tutorial supervision of a faculty sponsor. A maximum of six hours from Communication Studies 390, 490 and 491 may be counted toward degree requirements. Not for graduate credit. Prerequisite: twelve hours of communication studies. Special approval needed from the instructor.

CMST492 - Workshop in Performance Studies 492-2 to 8 Workshop in Performance Studies. Summer offering concentrating in specialized areas of performance studies. Prerequisite: CMST 201 and CMST 370 or consent of instructor or graduate standing.

CMST493 - Special Topics in Communicatn 493-3 to 9 (3,3,3) Special Topics in Communication. An exploration of selected current topics in communication arts and studies. Topics vary and are announced in advance; both students and faculty suggest ideas. Students may repeat enrollment in the course, as the topic varies.

CMST494A - Internship-Comm Pedagogy 494A-1 to 6 Internship-Communication Pedagogy. A supervised experience in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Mandatory Pass/Fail. Special approval needed from the instructor.

CMST494B - Internship-Debate 494B-1 to 6 Internship-Debate. A supervised experience in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Mandatory Pass/Fail. Special approval needed from the instructor.

CMST494C - Internship-Intercultural Comm 494C-1 to 6 Internship-Intercultural Communication. A supervised experience in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Mandatory Pass/Fail. Special approval needed from the instructor.

CMST494D - Internship-Interpersonal Comm 494D-1 to 6 Internship-Interpersonal Communication. A supervised experience in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Mandatory Pass/Fail. Special approval needed from the instructor.

CMST494E - Internship-Organizational Comm 494E-1 to 6 Internship-Organizational Communication. A supervised experience in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Mandatory Pass/Fail. Special approval needed from the instructor.

CMST494F - Internship-Performance Studies 494F-1 to 6 Internship-Performance Studies. A supervised experience in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Mandatory Pass/Fail. Special approval needed from the instructor.

CMST494G - Internship-Persuasive Comm 494G-1 to 6 Internship-Persuasive Communication. A supervised experience in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Mandatory Pass/Fail. Special approval needed from the instructor.

CMST494H - Internship-Public Relations 494H-1 to 6 Internship-Public Relations. A supervised experience in a professional or career setting. Maximum of six hours to be counted toward degree requirements. Not for graduate credit. Mandatory Pass/Fail. Special approval needed from the instructor.

CMST501 - Intro Communication Research 501-3 Introduction to Communication Research. Survey of research methods utilized in the discipline of communication studies. Discussion of these methods as they apply to the various subject matter typologies. Introduction to basic conventions of research investigation and reporting.

CMST503 - Communicology 503-3 Communicology as a Human Science. Introduction to the human science approach (phenomenology) to theory construction in human communication. Examination of the modality conditions for evidence (actuality, possibility, necessity, sufficiency) and the corresponding logics (assert, problematic, apodictic, thematic) for qualitative research. Focus on the Abduction models of human communication and practice used by theorists such as Gregory Bateson, Paul Waltzlawick, Roman Jakobson, Charles S. Pierce, Maurice Merleau-Ponty and Michel Foucault.

CMST504 - Empirical Phenomenological Res 504-3 Seminar: Empirical Phenomenological Communication Research. Review and analysis of the types of empirical phenomenological research and methods of capta/data collection relevant to the study of human communication. Prerequisites: CMST 501 and CMST 503 or consent of instructor.

CMST506 - Ethnography of Communication 506-3 Ethnography of Communication. Survey of research literature and methods in the ethnography of communication, emphasizing description of communicative practices situated in particular cultural contexts. Course includes such topics as theoretical assumptions and genres of ethnographic writing.

CMST507 - Ethnographic Fieldwork 507-3 Ethnographic Fieldwork. Advanced study of culturally distinctive patterns of communicative conduct in particular social settings, groups and/or communities. Emphasizes fieldwork methods (e.g., participant-observation, ethnographic fieldnotes, ethnographic interviews) and practice in the collection of data from which cultural patterns of communication can be formulated, including the analysis and interpretation of such data. This course is based in the perspective of ethnography of communication.

CMST508 - Autoethnography 508-3 Autoethnography. Survey of research literature and methods in autoethnography with particular emphasis on the communicative self as a way of studying and speaking about culture. Calling upon the evocative and self-reflexive, strategies for field work and scholarly representation are explored.

CMST509 - Interp/Critical Methods 509-3 Interpretive/Critical Methodologies. Survey of methodological approaches that facilitate analysis of ways discourses constitute, perpetuate, and maintain particular meanings. Objective is to identify, explicate, and practice procedures for conducting interpretive/critical communication research. Prerequisite: CMST 501 or consent of instructor.

CMST510 - Sem: Rhetoric Theory & Society 510-3 Seminar: Rhetoric Theory and Society. A survey of selected theories of rhetoric. Emphasis on major contributors of historical or contemporary importance.

CMST513 - Studies in Rhetoric 513-3 to 9 (3,3,3) Studies in Rhetoric. An exploration of selected topics in the field of rhetoric. May be repeated with change of topic area. Topics announced prior to each offering. May be repeated up to nine hours.

CMST515 - Studies Gender Sexuality Comm 515-3 to 9 (3,3,3) Studies in Gender, Sexuality, and Communication. (Same as WGSS 515) How communicative activity creates and sustains human beings as gendered. Emphasis on gaining familiarity with contemporary research on gendering from a particular perspective (e.g., ethnography, performance, phenomenology, quantitative methods, rhetorical criticism). May be repeated when perspective varies. Perspective announced prior to each offering.

CMST526 - Sem-Studies in Persuasion 526-3 Seminar: Studies in Persuasion. The study of persuasion in social-political contexts. Exploration of contemporary research and selected theories in persuasion. Examination of philosophical-ethical questions related to persuasion. Readings, research and discussions.

CMST531 - Seminar: Comm Pedagogy 531-3 to 9 Seminar: Communication Pedagogy. Advanced study of selected problems in communication pedagogy. Analysis of research problems and methodologies in communication pedagogy research. Topics may vary from year to year. May be repeated only if topic differs each time repeated.

CMST533 - Critical Comm Pedagogy 533-3 Critical Communication Pedagogy. Advanced study of communication pedagogy research from a critical perspective. Foundations of critical communication pedagogy examined with special attention to current research trends, paradigmatic debates, and issues of culture and power.

CMST535 - Teaching as Performance 535-3 Teaching as Performance. Survey of theoretical, methodological and instructional approaches to education that foreground performative ways of teaching and learning. The course provides content and learning opportunities aimed toward the development of critical, embodied and socially transformative pedagogies. Prerequisite: six hours of credit in either Communication Pedagogy or Performance Studies or consent of instructor.

CMST537 - Comm Pedagogy & Culture 537-3 Communication Pedagogy and Culture. Advanced study of communication pedagogy research from a critical/cultural perspective. Survey of research in communication pedagogy that examines culture, including such topics as intercultural/multicultural education, cultural studies and communication, as well as feminist/queer pedagogies.

CMST539 - Comm Studies University Level 539-3 Communication Studies at University Level. Analysis and practice of instructional methods. Focus on the development of instructional philosophy and skills with specific applications to teaching the introductory communication studies course.

CMST540 - Language, Culture & Semiology 540-3 Seminar: Language, Culture, and Semiology. Examination of communication problems and research focusing on the relation among cultural values, communication behaviors in the speech community, and social exchange. Emphasis on the semantics and pragmatics of intercultural communication and social semiotic systems. Prerequisite: CMST 440 or CMST 441 or consent of instructor.

CMST541 - Studies Intercultural Comm 541-3 to 9 (3,3,3) Studies in Intercultural Communication. Advanced study of selected topics in intercultural communication. May be repeated for a total of nine hours when topics vary. Special approval needed from the instructor.

CMST542 - Intercultural Approaches 542-3 Paradigmatic Approaches to Intercultural Communication. This course provides a survey of intercultural communication studies, paying close attention to the historical development of the field. Students will engage with multiple paradigmatic approaches to intercultural communication research; mainly functionalist, interpretive, and critical. Students can also expect to reflect on how we can connect intercultural communication research to everyday practice.

CMST543 - Identity, Culture & Comm 543-3 Identity, Culture, and Communication. A theoretical exploration of identity performance across and in/between cultures. Draws mainly upon cultural studies, postcolonial theory, literary theory, critical globalization theory, and intercultural communication theory to provide a multidisciplinary understanding of how identity politics are negotiated in cultural contexts.

CMST545 - Sem-Semiology & Semiotic Comm 545-3 Seminar: Semiology and Semiotic Communication. Advanced study of sign, signal, and symbol systems in the phenomenology of communication. Systematic analysis of the metatheory relationship between expression and perception as manifest in verbal and nonverbal communication systems. Emphasis on semiology as a communication theory in the human sciences. Some consideration of related theories such as structuralism, interspecies communication, human/machine communication and general systems theory. Prerequisite: CMST 440 or CMST 441 or consent of instructor.

CMST546 - Conversatn Analysis:Pragmatics 546-3 Conversation Analysis: Pragmatics. (Same as LING 546) Study of the pragmatics of everyday conversation: sequential organization, topical coherence, speech act rules and functions, contextual frames, and background understandings. Emphasis on observational research methods and analysis of original data. Special approval needed from the instructor.

CMST547 - Conv Analysis:Ethnomethodology 547-3 Conversation Analysis: Ethnomethodology. Descriptive study of sequential organization of interaction. Students read research literature and learn methods for transcription and analysis in the conversation analytic tradition. Topics include openings and closings, adjacency pair organization, turn taking, overlap, assessments, pre-sequences, repair, topic, nonvocal activities, response, laughter, storytelling, argument, play and institutional contexts. Special approval needed from the instructor.

CMST551 - Phenomen Sem-French Comm 551-3 Phenomenology Seminar I: French Communicology. A critical examination of dominant problematics, thematic, and rhetoric in communication theory and praxis developed as a human science (science humaine de communicologie) by such contemporary French theorists as Barthes, Bourdieu, Foucault, Merleau-Ponty, Perelman and Ricoeur. Prerequisite: CMST 401 and CMST 461 or consent of instructor.

CMST561 - Studies Small Group Comm 561-3 to 6 (3,3) Studies in Small Group Communication. Studies of group action, interaction and leadership designed to apply small group theory and communication theory. Emphasis on the nature of group communication as exemplified in the laboratory model or the discussion/conference model. Students may repeat enrollment to a total of six hours.

CMST562 - Phil of Human Communication 562-3 to 9 (3,3,3) Philosophy of Human Communication. (Same as PHIL 562) Study of selected topics in the philosophical study of communication. May be repeated with change in topic area. Topics announced prior to each offering.

CMST563 - Studies Interpersonal Comm 563-3 Studies in Interpersonal Communication. An investigation of recent theories and empirical research concerning interpersonal communication. Emphasis will be placed on analyses of relational development, maintenance and change in the contexts of working relations, friendships and families. Both analytic and quantitative perspectives on interactional processes will be considered.

CMST564 - Family Communication 564-3 Family Communication. Survey of theories, research methods, and empirical studies of communication in family contexts. Emphasis is on describing functional family processes, including parent-child communication and sibling communication across the lifespan, and influences of various types of family structures on the social interactions that occur in families.

CMST570 - Performance Methodologies 570-3 Performance Methodologies. The examination of performance methodologies for exploring human communication. Particular attention is given to generating and reporting performance knowledge. Prerequisite: nine hours of 400 level performance studies courses or consent of instructor.

CMST571 - Performance History 571-3 History and Criticism in Performance Studies. A study of social and critical trends in performance studies with emphasis on their historical development. Prerequisite: nine hours of performance studies or consent of instructor.

CMST572 - Performance Theory & Criticism 572-3 Theory and Criticism in Performance Studies. A study of the theoretical trends in performance studies and literary criticism. Prerequisite: nine hours of performance studies or consent of instructor.

CMST573 - Performance Criticism 573-3 Performance Criticism. An examination of the theoretical and practical issues surrounding the evaluation of artistic performances for interpretation, rhetoric, theatre, journalism, film and television students interested in developing their critical skills. Special approval needed from the instructor.

CMST574 - Studies in Performance 574-3 to 6 (3,3) Studies in Performance. An exploration of selected current topics in the field of performance studies. May be repeated for a total of six hours. Prerequisite: twelve hours of performance studies courses or consent of instructor.

CMST576 - Performance Art 576-3 Performance Art. The study and creation of postmodern performance. Particular attention is given to performance artists in the theatrical tradition. Prerequisite: nine hours of performance studies or consent of instructor.

CMST580 - Issues in Organizational Comm 580-3 to 9 Issues in Organizational Communication. Advanced study and applications related to specific issues in organizational communication. May be

repeated with change of topic area. Topics announced prior to each offering. Special approval needed from the instructor.

CMST593 - Research Probs in Comm 593-1 to 3 Research Problems in Communication. Independent research study with a theoretical focus under the tutorial supervision of a member of the graduate faculty. Special approval needed from the instructor and departmental adviser.

CMST595 - Research Report 595-1 to 3 Research Report. One to three hours required of all non-thesis students writing a research paper. Graded S/U or DEF only.

CMST598 - Pro Sem in Human Comm 598-0 Proseminar in Human Communication. An open forum offered each semester for the systematic discussion of contemporary research in the field of communication arts and studies. Specific content is determined by participating faculty and students. Topics will usually be related to current faculty research or dissertations in progress in the department. Graded S/U only.

CMST599 - Thesis 599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree.

CMST600 - Dissertation 600-1 to 36 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

CMST601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

CMST699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Communication Studies Faculty

Auxier, Randall E., Ph.D., Emory University, 1992.

Bardhan, Nilanjana R., Professor, Ph.D., Ohio University, 1998.

Crow, Bryan, Associate Professor, Ph.D., University of Iowa, 1982.

Daughton, Suzanne M., Associate Professor, Emerita, Ph.D., University of Texas at Austin, 1991.

Engstrom, Craig L., Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2010.

Gingrich-Philbrook, Craig, Professor, Ph.D., Southern Illinois University Carbondale, 1994.

Graham, Todd, Director of Debate, Ph.D., Arizona State University, 2000.

Gray, Jonathan, Associate Professor, Ph.D., Louisiana State University, 1999.

Hinchcliff-Pelias, Mary, Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1982.

Houston, William Josh, Senior Lecturer, M.A., Western Illinois University, 1998.

Kleinau, Marion L., Professor, Emerita, Ph.D., University of Wisconsin, 1961.

Kleinau, Marvin D., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1977.

Langsdorf, Lenore, Professor, Emerita, Ph.D., SUNY at Stony Brook, 1977.

Lanigan, Richard L., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1969.

McClearey, Denise M., Senior Lecturer, M.A., Southern Illinois University Edwardsville, 1988.

Pace, Thomas J., Professor, Emeritus, Ph.D., University of Denver, 1957.

Pelias, Ronald J., Professor, Emeritus, Ph.D., University of Illinois, 1979.

Pensoneau-Conway, Sandra L., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2006.

Pineau, Elyse, Associate Professor, Emerita, Ph.D., Northwestern University, 1990.

Smith, William D., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1964.

Stucky, Nathan, Professor, Emeritus, Ph.D., University of Texas at Austin, 1988.

Toyosaki, Satoshi, Associate Professor, Ph.D., Southern Illinois University Carbondale, 2005.

Walker, Rebecca, Assistant Professor, Ph.D., Louisiana State University, 2011.

Wiley, Raymond D., Assistant Professor, Emeritus, M.S., Southern Illinois University, 1965.

Counselor Education

Counselor Education Courses

COUN100 - Decision Making 100-2 Decision Making for Career Development. Examination of factors relating to career decision making. Emphasis on the continuous use of learned processes and information in vocational development. Supplementary group guidance and counseling sessions required. Charges may be assessed to cover the cost of administering and scoring occupational interest surveys to be given during the course. These charges should be less than \$10.

COUN412 - Human Behavior & Mental Health 412-3 Human Behavior and Mental Health. This course is designed to provide an overview of the factors and conditions in life that tend to affect mental health and the community resources available to address mental health needs. Social, political, economic and professional resources will be examined as they relate to the development, implementation and coordination of mental health services and systems. Restricted to junior or senior standing.

COUN430 - Conflict Resoltn Edu Envirns 430-3 Conflict Resolution Skills for Education Environments. The purpose of the course is to help educators and others to develop the understanding and skills necessary to promote peaceable means for resolving conflict with and among children and adolescents in an educational environment. The course will focus on participants developing personal techniques and approaches to assist children and adolescents to develop age-appropriate conflict resolution skills.

COUN481 - Seminar 481-1 to 12 Seminar. Conducted by staff members and distinguished guest lecturers on pertinent topics. Special approval needed from the instructor and department.

COUN491 - Spec Res Prob-Indiv Stdy 491-1 to 6 Special Research Problem-Individual Study. For majors. Formulating, investigating, and reporting on a problem in the area of applied psychology. Restricted to advanced standing. Special approval needed from the department.

COUN493 - Introduction to Helping Skills 493-3 Introduction to Helping Skills. (Same as PSYC 441) This course provides an introduction to the interviewing skills used in the helping professions. Helping skills are studied and practiced through simulated counseling sessions. This course does not meet the program requirements for a Master's degree in Counselor Education. Restricted to graduate or senior standing.

COUN500 - Interviewing and Skills 500-3 Essential Interviewing and Counseling Skills for the Professional Helper. (Same as REHB 501) This course provides the foundation for counselors and other professionals-in-training for understanding the counseling process in a multicultural society including an orientation to wellness, the development of professional characteristics and behaviors that influence the helping process, and a mastery of the essential interviewing and counseling skills. Restricted to Graduate Standing only. Concurrent enrollment allowed in COUN 541.

COUN501 - Clinical Mental Health 501-3 Introduction to Clinical Mental Health Counseling. This course provides an overview of the history, foundations, practices and ethical and legal issues relevant to clinical mental health counseling. This course is a required course for clinical mental health and marriage, couple and family counseling and does address specific skill attainment in areas of documentation, report writing and program evaluation skills. A grade of B or better required.

COUN502 - Intro to School Counseling 502-3 Introduction to School Counseling. This course provides an overview of the history, foundations, practices, and ethical and legal issues relevant to school counseling as well as an overview of the structure, organization, and operation of the educational system in P-12 schools. This course offers specific skill attainment in areas of documentation in the school setting, classroom guidance, report writing and program evaluation skills. A grade of B or better required.

COUN503 - Intro to MCFC 503-3 Introduction to Marriage, Couple, and Family Counseling. This course provides an overview of the history, foundations, practices, and ethical and legal issues relevant to marriage, couple, and family counseling. This course is a required course for clinical mental health

and marriage, couple and family counseling and does address specific skill attainment for working with couples and families. A grade of B or better required. Prerequisite: COUN 541 with a grade of B or better.

COUN505 - Identity and Ethics 505-3 Professional Counselor Identity and Ethics. Professional counseling requires a foundational understanding of the history of the profession, the various counseling speciality areas, the ethical standards of practice, use of ethical decision making models, legal, social and political issues and understanding needs of consumers through the lens of diversity and advocacy. This course is required for all counseling specialties seeking CACREP accredited degrees.

COUN511 - Adult Learning Theories 511-3 Theories and Practices of Adult Learning. Critical review of empirical, methodological and theoretical developments in the experimental study of instructional variables as related to student behavior. This course is required for counselor education doctoral students and recommended for all doctoral students seeking knowledge about adult learning.

COUN512 - Life-Span Development 512-3 Life-Span Development. Investigates physical, intellectual, and social development throughout the life span. This course provides information regarding learner characteristics and transitions. Focus is on applications for education, counseling, and related services. Students will develop competency in application of human development theory and current research to clients and the counseling profession. Prerequisite: COUN 541.

COUN521 - Consult Schl & Organz Systems 521-3 Consultation of Schools and Organizational Systems. Surveys the theories and available research on several approaches to consultation with families, schools and other organizational systems. Systemic approaches to consultation are emphasized. Includes coursework in methods of reading and reading in the content area. Grade of C or better required.

COUN537 - Counsel Child-Theo/Tech 537-3 Counseling Children: Theory, Techniques, and Practice. The foundations and techniques of individual and group counseling with particular emphasis on theories, operational approaches, tools and related procedures. Prerequisite: COUN 500 with a grade of B or better, or concurrent enrollment.

COUN540 - Issues & Trends in Counseling 540-3 Issues and Trends in Counseling. Students will examine current problems, issues, and trends with an emphasis on strategies for solving the problems; clarifying the issues and placing them in proper perspective; examining possible ramification of the trends.

COUN541 - Theories of Counseling 541-3 Theories of Counseling. (Same as REHB 551) This course presents an overview of current theories of counseling with a special focus on the philosophical assumptions, key concepts, techniques and practical applications of each approach. Each of the theories will be examined critically such that the student can begin to formulate an integrated personal theory of counseling. Prerequisite: COUN 500 with a grade of B or better or concurrent enrollment.

COUN542 - Career Development 542-3 Career Development Procedures and Practices. (Same as REHB 521) For pupil personnel workers, teachers, and administrators to give an orientation to theoretical, economic, and informational aspects of career guidance and to provide experience with using career information in counseling and decision making. Obtaining occupational and information materials for use in guidance and teaching.

COUN543 - Group Theory & Practice 543-3 Group Theory and Practice. (Same as REHB 585B) Focuses on the theory, functions, and techniques of group procedures appropriately applied to decision making, problem solving and resolution of conflict. Major emphasis is given to the dynamics of group behavior, the social-psychological interaction of small groups and their applications to group counseling. Dual emphasis is placed upon interpersonal self-understanding and the familiarity with group procedures. Prerequisite: COUN 500 with a grade of B or better.

COUN544 - Appraisal in Counseling 544-3 Appraisal in Counseling. (Same as REHB 530) Principles and procedures for gathering appraisal and assessment information about people. Theoretical basis for describing and comparing individuals as well as assessing developmental stages and types will be covered. Particular emphasis will be the validity and reliability of data collection methods, interpretation of this information to individuals and procedures for selection of instruments.

COUN545 - Cross Cultural Factors 545-3 Cross Cultural Factors Affecting Counseling. (Same as REHB 519) Designed to cover special problems of different cultural groups in the counseling process. The influence of culture upon values, beliefs, interests and feelings will be explored as they relate to the rights of the client. Prerequisites: COUN 500 and COUN 541, each with a grade of B or better.

COUN546 - Crisis and Counseling 546-3 Crisis and Counseling. This course is designed to give the counselor a theoretical and practical background in crisis preparation and intervention in a variety of settings. Students will examine relevant research and theory on crisis and resilience, reflect on their personal crisis experiences and begin to develop fundamental crisis intervention skills. This course is both applicable and practical in presentation.

COUN547 - Research and Evaluation 547-3 Research and Evaluation in Counseling. (Same as REHB 593A) This course provides knowledge of the field of counseling research and specific methods for conducting and critically reading research as well as applications of needs assessment and program evaluation including using computers for data analysis and legal and ethical considerations in research and evaluation. Restricted to advanced standing in counselor education program or rehabilitation counseling program.

COUN548A - School Counseling Practicum 548A-3 School Counseling Practicum. A combined seminar, laboratory, and field experience representing the central focus of the program in school counseling. Enables the student to practice the role of the counselor under close supervision. Graded S/U only. Prerequisite: COUN 500, COUN 541, each with a grade of B or better. Restricted to admission to the counseling program.

COUN548B - Counseling Practicum 548B-3 Counseling Practicum. Practice of individual and group counseling skills with different populations in varied settings. The professional settings depends on the student's interest area. Individual and group supervision are provided. Use of video-recorder is required. Graded S/U only. Prerequisite: COUN 500, COUN 541, each with a grade of B or better. Concurrent enrollment in COUN 543 required. Restricted to admission to counseling program.

COUN548C - Career Group Practicum 548C-3 Career Group Practicum. Supervision in the creation and maintenance of small group process for the purpose of career development. Application of theoretical models is stressed concurrently with entry level skills in the facilitation of small groups and career counseling. Graded S/U only. Prerequisite: COUN 500, COUN 541, COUN 548A, COUN 548B. Restricted to admission to counseling program.

COUN548E - Marriage/Couple/Family Practcm 548E-3 Practicum in Marriage, Couple, and Family Counseling. Supervised on-campus counseling experience with couples and families. Supervision will be individual as well as within the context of a therapy team. Graded S/U only. Prerequisite: COUN 500, COUN 503, COUN 548A or B, each with a grade of B or better, concurrent enrollment in COUN 560. Special approval needed from the instructor.

COUN549 - Diag/Treat Mental Disorders 549-3 Diagnosis and Treatment of Mental Disorders. This course provides counselors and other human service workers with an overview of the current edition of the DSM and is designed to acquaint future counselors or students in other helping professions with an understanding of the etiology, prevention, and treatment of mental and emotional disorders. The course will address differential diagnosis and associated disorders of the primary diagnoses in the multi-axial system. Prerequisite: COUN 500, 501 or 502 or 503, or consent of instructor.

COUN551 - Supervision of Practicum 551-3 The Supervision of Practicum. Doctoral students will: become familiar with models of counseling supervision; practice supervision with Master's students; and be acquainted with the research in the counselor training and supervision. Individual and group supervision are provided. Tape recording of supervision sessions is required.

COUN560 - Seminar: Couple and Family 560-1 to 3 Seminar in Couple and Family Counseling. Seminar will focus on current clinical and research topics in the field of couple and family counseling and the general issues that emerge from the couple and family counseling practicum. Prerequisite: COUN 548A or B, COUN 503, concurrent enrollment in COUN 548E. Special approval needed from the instructor.

COUN568A - Seminar Coun-Prof Orient 568A-3 Topical Seminar in Counseling-Professional Orientation. A series of advanced seminars in counseling. Sections A through C are to be taken only once. Section D may be repeated as topics vary. Students may take up to 12 credits only for 568. Restricted to admission to Ph.D. program.

COUN568B - Seminar in Counseling-Theory 568B-3 Topical Seminar in Counseling-Advanced Theory. A series of advanced seminars in counseling. Sections A through C are to be taken only once. Section D may be repeated as topics vary. Students may take up to 12 credits only for 568. Restricted to admission to Ph.D. program.

COUN568C - Seminar in Counsel-Research 568C-3 Topical Seminar in Counseling-Conducting Research. A series of advanced seminars in counseling. Sections A through C are to be taken only once. Section D may be repeated as topics vary. Students may take up to 12 credits only for 568. Restricted to admission to Ph.D. program.

COUN568D - Seminar in Counseling 568D-3 Topical Seminar in Counseling-Selected Topics. A series of advanced seminars in counseling. Sections A through C are to be taken only once. Section D may be repeated as topics vary. Students may take up to 12 credits only for 568. Restricted to admission to Ph.D. program.

COUN576 - Research Issues-Counselor Educ 576-4 Research Issues in Counselor Education. Introduction to research methods and current research issues in the areas of human learning and development, statistics and measurement, counselor education and special education. The course will focus on what is currently known about selected major research issues in each of the above areas and what these findings imply for educational practice. Restricted to admission to doctoral program.

COUN590 - Sex, Violence & Trauma 590-3 Special Topics in Family Counseling: Sexuality, Violence, and Trauma. This course is designed to prepare counselors-in-training to work effectively with couples and families who may be dealing with issues related to sexuality, violence, and trauma, and to address relevant professional, legal, and ethical issues surrounding clinical work in these areas. Human sexuality includes physiological, psychological, developmental, social, and relational issues as they relate to the conceptualization and treatment of clinical issues in couples counseling. Family violence issues include physical, emotional, and sexual abuse of children, elders, and intimate partners. In addition, the course provides an overview of theories and application of crisis intervention strategies for individuals and family members experiencing a crisis or trauma. Prerequisite: COUN 503.

COUN591 - Internship in Counseling 591-1 to 3 Internship in Counseling. A total of 6 credits (in a minimum two semesters) of supervised internship at an approved site, for 600 clock hours (including 240 hours direct client service in individual, group, and/or family counseling). Internship provides advanced students opportunity to perform a variety of activities expected of a regular employed professional counselor, under supervision of on-site and faculty supervisors. Graded S/U. Prerequisites: COUN 548A or B and COUN 548C.

COUN592 - Independent Study & Investigatn 592-1 to 8 (1 to 6 per semester) Independent Study and Investigation. For advanced graduate students. Topics of interest to the individual student are studied under supervision of a department staff member. Special approval needed from the department.

COUN593 - Individual Research 593-1 to 4 Individual Research. For advanced graduate students in Counselor Education. Formulating, investigating and reporting of research problems in the area of Counselor Education. Special approval needed from the department.

COUN594 - Advanced Practicum 594-1 to 6 Advanced Practicum. Primarily for advanced Master's or doctoral students who want to continue developing their counseling skills. Counseling settings are individually arranged, however, they typically follow the 494 practicum experience. Graded S/U only.

COUN595 - Intern: Psych of Teaching 595-1 to 8 Internship in the Psychology of Teaching. Full- or half-time teaching practice in the management of classroom behavior, and the design, delivery, and evaluation of instruction. Interns will be supervised by University staff. Graded S/U only. Special approval needed from the department.

COUN597 - Doctoral Internship Counseling 597-6 Doctoral Internship in Counseling. This experience is designed to prepare students for leadership positions in the education and supervision of counselors. It should be consistent with program's doctoral internship guidelines, as well as specific student goals. Internship occurs at the end of the student's doctoral program and is coordinated by the student's program chair. An internship plan is to be developed by the student with guidance from the program chair, and may include the following counselor education and supervision activities: advanced counseling practice, supervision, teaching, professional service, and research. Prerequisite: COUN 551, COUN 594. Special approval needed from the program.

COUN599 - Thesis 599-1 to 6 Thesis. Special approval needed from the department.

COUN600 - Dissertation 600-1 to 32 (1 to 16 per semester) Dissertation.

COUN601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

COUN699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Cinema and Photography

The major in cinema and photography is focused on the history, theory, and practice of the still and moving image within the broader framework of evolving technologies and a media arts education that is grounded in the arts and the humanities. The course of study favors the integration of theory and practice and emphasizes experimentation and exploration across cinema, photography and their varied extensions in analog, digital, computational and intermedia arts practices, e.g., installation, performance, and immersive environments. It prepares students for careers in fine arts, commercial, professional, and educational settings; to explore the social, cultural, and political implications of media arts and culture; and, to engage with contemporary media practices.

Beginning with a set of foundational courses that integrate theory and practice and offer an interdisciplinary introduction to media arts, students may select from intermediate and advanced courses to specialize in one of the three specializations. The foundational courses parallel titles in both studies and practice and comprise of: Still Image and Photo; Moving Image and Cinema; Sound; Performance. These lead to intermediate and advanced courses that lead to a specialization in Cinema or Photography. Within the specialization, student choose emphases areas, such as: fine arts and professional (applied) photography; screenwriting, cinema production, and studies; experimental processes, new media history and production, documentary practices and studies, and special topics and master classes in specialized and interdisciplinary investigations of cinema, photography and expanded media arts. See suggest curricular guides and course descriptions.

Students are urged to declare the major and select the specialization as soon as possible. In all cases, grades below C in any Cinema and Photography courses will not be accepted for fulfilling requirements in the major and in some cases course grades of B (3.00) or better are required. See course descriptions for prerequisite requirements. Without exception, Cinema and Photography (CP) courses in which students have received grades of D, F, AU, or INC cannot be used to satisfy prerequisite requirements for other Cinema and Photography (CP) courses.

Courses in Cinema and Photography (CP) may have limited enrollments, especially advanced courses. Not all courses are offered each semester. Admission to certain Cinema and Photography (CP) and Mass Communication and Media Arts (MCMA) courses is restricted, and consent of department or

permission of instructor must be obtained prior to registration. Consent of department to register for some courses may be based upon grade point average, performance in the program, and submission of creative portfolio, scholarly papers, and/or written proposals for work to be accomplished. Students are encouraged to plan well in advance to ensure meeting course prerequisites and to fulfill all requirements of the major.

Student enrollment in Cinema and Photography may be cancelled for those who do not attend all class meetings during the first week of classes.

All students in the major take CP 100, CP 300A-D and CP 360 A-D to complete the Foundations in the major. Subsequently, they design their own programs of student within the requirements for any of the three specializations. For the Cinema Specialization, student will enroll in: CP 101, CP 400; 12 credits of cinema 400-level courses, as well as 9 credit hours of 300 or 400 level cinema courses. These courses must include six credits of cinema studies (history/theory/criticism), 3 credit at the 400-level and an additional 3 credits at either the 300- or 400-level. No more than six credit hours from a combination of CP 491, CP 492, CP 494, CP 495, and CP 497A,B may count toward the Cinema Specialization.

For the Photography Specialization, students will enroll in: CP 310, CP 320, CP 330, CP 332; as well as CP 404 or CP 431; CP 432 or CP 498; as well as six credits of additional 400-level photography courses. No more than six credit hours from a combination of CP 491, CP 492, CP 494, CP 495, and CP 497 may count toward the Photography Specialization. Students end their undergraduate experience with an emphasis with in commercial or fine art photography. For commercial photography, students take Cinema and Photography CP 431 an CP 432. For fine art photography, the course sequence is CP 404, and then CP 498. All photography students then show their final works at a public exhibition.

Students in the two specializations are required to complete a University-approved minor of at least 15 credits, with the exception of transfer students. Any student transferring into the major of Cinema & Photography with 50 or more credit hours of prior coursework from another institution will not be required to complete an minor. With the advice of the department advisor and/or the department chair, students are encouraged to match their minor field with this academic interests, within or outside of their major. Cinema & Photography major students choosing to minor in Cinema, Photography, Animation or Visual and Screen Cultures may not double count credits for their major and minor requirements. In the case where the same course is required for both the major and minor Cinema & Photography the course will be attributed to the major and an additional elective course must be completed for the minor in place of these course credits.

Students must purchase materials for some Cinema and Photography (CP) production courses, we encourage students to own a DSLR camera capable of capturing still photos and recording video and a laptop (specifics posted on the department website), and an external hard drive. In still photography production courses, student provide their own DSLR camera and an external hard drive, film, photographic paper and certain specialized chemicals. A laptop computer is required, on which the appropriate photography editing software will run. Please consult the Academic Advisor for the specifics related to this requirement. Some photography students have found that owning additional items of equipment is advantageous. Digital imaging courses require students to provide storage media and pay fees for materials for digital printing in departmental facilities. An equipment usage fee is charged for each cinema and intermedia production course. A laboratory fee is charged for each still photography production course. A screening fee is charged in each course that depends on presentation of course content on DVDs, film, slides, and/or videos.

A maximum of 60 credit hours of Cinema and Photography (CP) course work may be used to complete the Bachelor of Arts degree requirements. For the Cinema Specialization, a minimum of 47 credit hours are required; up to 13 additional credit hours in CP course work may be used toward electives. For the Photography Specialization, a minimum of 46 credit hours of CP coursework is required; up to 14 additional credit hours in CP Coursework may be used toward electives. Electives are defined as coursework outside the University Core Curriculum requirements and the requirements of the chosen specialization in the Cinema and Photography major.

All students in the Cinema and Photography major must complete three credit hours from either the School of Journalism (JRNL) or the Department of Radio, Television and Digital Media (RTD) with a grade of C or better. Courses being used to fulfill a University Core Curriculum requirement, CP major or CP department minor requirement may not also fulfill this requirement.

Students transferring credits from another institution must complete a minimum of 35 credit hours of their Cinema and Photography major coursework at SIUC.

Minors in Cinema and Photography

Students completing any of the four minors below must complete a minimum of 12 credit hours toward their minor at SIUC. CP 491, CP 494, CP 495, and CP 497A,B may not count toward any Cinema and Photography Department minor.

Cinema and Photography major students choosing to minor in Animation, Cinema, Photography or Visual and Screen Cultures may not double count credits for their major and minor requirements. In the case where the same course is required for both the Cinema and Photography major and minor, the course will be attributed to the major and an additional elective course must be complete for the minor in place of these course credits to reach the total credit hours required for the minor.

Animation Minor

A total of 20 credit hours are required for the minor. The student must complete CP 300A & B Media Arts Foundations (with a grade of B or better), CP 360A & B Media Studies Foundations, CP 301-3 Basic Drawing from Pencil to Pixels, CP 464-3 History and Theory of Animation and six credit hours of 300- or 400-level designated elective courses selected from: CP 454, CP 473 and animation topics such as Experimental Animation, Flash Animation, and Stop-Motion Narrative Animation, offered under CP 470A, CP 470B, CP 472 or approved related courses. All courses for the Minor in Animation must be completed with a grade C or higher, with the exception of CP 300 A-D, which must be completed with a grade of B or better.

Cinema Minor

The minor in Cinema offers students a foundation in the history, theory and critical analysis of cinema and the hands-on production of films. Students who wish to minor in Cinema must complete a total of 20 credit hours of Cinema coursework including; CP 101-3 Film History and Analysis and CP 300 A-C Media Arts Foundations, both with grades of B or better, and complete CP 360B Media Studies: Moving Image and Cinema and 9 additional credit hours of Cinema coursework with grades of C or better.

Photography Minor

Students who wish to minor in Photography must successfully complete a total of at least 18 semester hours. The student must complete; CP 300A Media Arts, Still Image and Photography, CP 310: History of Photography, CP 320: Foundations of Photography, and CP 330: Intermediate Photography, and complete at least five credit hours of 300- or 400-level photography courses in order to obtain a minor. All courses for the minor in photography must be completed with a grade of C or higher.

Visual and Screen Cultures Minor

The Minor in Visual and Screen Cultures allows students to specialize in the study of cinema and other visual media, with emphasis on the history, theory, and criticism of these art forms. Students who wish to minor in Visual and Screen Cultures must successfully complete at least 20 semester hours. The student must complete CP 101: Film History and Analysis, CP 310: History of Photography or CP 441: History of New Media, CP 360 A-D: Media Studies Foundations, one three credit studies elective at the 400-level and one three credit studies elective at the 300- or 400-level. All courses for the minor must be completed with a grade of C or higher.

Three-Year Curriculum Plan

The Department of Cinema and Photography offers a three-year graduation plan option for students entering the program as freshmen. Students who attempt to pursue this plan will successfully complete 40 credit hours per academic year. For more information, please contact the Cinema and Photography academic advisor.

Bachelor of Arts Degree in Cinema and Photography, College of Mass Communication and Media Arts

Cinema Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for the Cinema Specialization in the Cinema and Photography Major	44 (47)
Cinema and Photography Foundation Courses	19
CP 100, CP 300A-D, CP 360A-D	
Cinema Specialization Requirements	25 (28)
CP 101 (UCC Fine Arts)	(3)
CP 400, CP 300- or 400-level Studies Electives, CP 400-level Studies Elective, CP 300- or 400-level Electives, CP 400-level Electives	
No more than six credit hours from a combination of CP 491, CP 492, CP 494, CP 495, and CP 497 may count toward the Cinema Specialization requirements.	
Journalism or Radio, Television, and Digital Media course	3
University Approved Minor - (not required for transfer students with 50 credits or more from another institution)	15
Electives - A maximum of 60 credit hours of CP coursework may be used to complete Bachelor of Arts degree requirements. A minimum of 47 credit hours of CP coursework is required for the Cinema Specialization and up to 13 additional credit hours in CP coursework may be used toward electives.	19
A maximum of 60 credit hours of CP coursework may be used to complete Bachelor of Arts degree requirements. A minimum of 47 credit hours of CP coursework is required for the Cinema Specialization and up to 13 additional credit hours in CP coursework may be used toward electives	
Total	120

Bachelor of Arts Degree in Cinema and Photography, College of Mass Communication and Media Arts

Photography Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for the Photography Specialization in the Cinema and Photography Major	46
Cinema and Photography Foundation Courses	19
CP 100, CP 300A-D, CP 360A-D	
Photography Specialization Requirements	27
CP 310, CP 320, CP 330, CP 332, CP 404, CP 432	21
Additional 400-level Photography courses	6
No more than six credit hours from a combination of CP 491, CP 492, CP 494, CP 495, and CP 497A,B may count toward the Photography Specialization requirements.	
Journalism or Radio, Television, and Digital Media course	3
University Approved Minor	15
(not required for transfer students with 50 credits or more from another institution)	
Electives	17
A maximum of 60 credit hours of CP coursework may be used to complete Bachelor of Arts degree requirements. A minimum of 46 credit hours of CP coursework is required for the Photography Specialization and up to 14 additional credit hours in CP coursework may be used toward electives	
Total	120

Lower-Division Portfolio Review

After completing the four courses of the Foundational curriculum, each Cinema specialization student will apply for upper-division status in the Cinema specialization of the Department of Cinema and Photography by presenting their work from these classes in a five minute presentation to a panel of departmental faculty members on the last Friday of classes at the end of each semester. Promotion to upper-division status is at the sole discretion of the faculty members. Students will be assigned a priority number that will be used for the purposes of registration into desired classes. Students who do not successfully pass the portfolio review may re-apply at the end of a subsequent semester, either by

retaking foundational courses or by working on improving the portfolio under the direction of the Chair or a designated faculty member.

Cinema Specialization Upper-Division Track Curriculum

Students are required to choose two tracks from the following menu (12 credits).

1. New Media. CP 361: History of New Media, CP 440: New Media Production.
2. Documentary. CP 357: History and Theory of International Documentary, CP 457: Documentary Production.
3. Experimental Cinema. CP 353: History of Experimental Film, CP 453: Experimental Production.
4. Screenwriting. CP 352: Writing the Short Film, CP 452: Screenwriting.
5. Narrative Cinema. CP 350: Short Cinema Studies, CP 450: Narrative Film Production.
6. Film Studies. CP 370: Topics in Cinema Studies, CP 470A: Advanced Topics in Cinema Studies.

Junior to Senior Portfolio Progress Check

After completing the courses in their two tracks, students are required to present a DVD reel of clips of their work (film, video, new media, a portfolio consisting of screenwriting or academic studies work) to a panel of departmental faculty members on the last Friday of classes of the semester in which they complete their second track. The purpose of this portfolio check is for the students to get formal, professional critique of their work outside of regular classes, in preparation for internship, graduate school, and job applications.

Students are required to choose four elective courses, no more than two of which can be from the 300-level (12 credits).

Individual 300-level courses in the tracks may count toward CP upper-division electives if the student has not elected to pursue that track.

Cinema and Photography Courses

CP100 - Forum in Art and Culture 100-1 Forum in Art and Culture. This course requires students to attend a selection of events and presentations by leading practitioners and thinkers on media arts, scholarship, contemporary practices hosted by the University through the semester. These events include exhibitions, lectures, screenings, performances, conversations, and readings. The goal is to foster a deeper appreciation of art and culture and its significance in our lives.

CP101 - Film History & Analysis 101-3 Film History and Analysis. (University Core Curriculum) An introduction to world history of cinema from its origins to the present, featuring important and influential films of various types and genres from many countries. Basic formal and technical aspects of the medium and means of analysis are also introduced. Students purchase texts. It is also the required foundation course for the Cinema Specialization in the Cinema and Photography major. Screening fee: \$30.

CP101H - Honors Film Hist & Analysis 101H-3 Honors Film History and Analysis. (University Core Curriculum) (University Honors Program) An introduction to world history of cinema from its origins to the present, featuring important and influential films of various types and genres from many countries. Basic formal and technical aspects of the medium and means of analysis are also introduced. Students purchase texts. It is also the required foundation course for the Cinema Specialization in the Cinema & Photography major. Screening fee: \$30. Course restricted to University Honors Program students.

CP120 - Making Media 120-3 Making Media: Digital Photo & Video Tools. Intro to basic digital photo and video media tools including basic camera functions, Apple i-life software, image capture, transfer, and basic editing. Students produce a final photo or video project published via DVD or the Web. Students use SIUC Mac labs or personal computers for hands-on assignments outside of class. Students must

have a simple digital camera or camera phone capable of still image and short video capture. Lab fee: \$35.

CP257 - Work Experience 257-1 to 6 Work Experience. Used to recognize work experience related to the student's educational objective. One to six hours of credit may be applied toward graduation requirements following departmental evaluation and approval. Mandatory Pass/Fail. Special approval needed from the department.

CP259 - Occupational Education in C&P 259-1 to 24 Occupational Education in Cinema and Photography. Credit is awarded to occupational educational experiences, beyond the high school level, related to cinema, photography, and/or media arts. Experiences may involve life-long learning, apprenticeships; military, corporate, or volunteer organizations or non-accredited post-secondary vocational-technical institutions. Credit will be determined by department evaluation. This credit may only be applied to general electives. Restricted to Cinema and Photography majors.

CP270A - Topics C&P-Hist/Theo/Critcsm 270A-3 to 12 Topics in Cinema & Photography. Various beginning level topics courses Cinema, Photography or Intermedia Arts. A)History/Theory/Criticism. May be repeated up to 12 credits as topics vary.

CP270B - Topics C&P-Production 270B-3 to 12 Topics in Cinema & Photography. Various beginning level topics courses Cinema, Photography or Intermedia Arts. B)Production. May be repeated up to 12 credits as topics vary.

CP270C - Topics C&P-Scriptwriting 270C-3 to 12 Topics in Cinema & Photography. Various beginning level topics courses Cinema, Photography or Intermedia Arts. C)Scriptwriting. May be repeated up to 12 credits as topics vary.

CP270D - Topics C&P-Interdisciplinary 270D 3 to 12 Topics in Cinema & Photography. Various beginning level topics courses Cinema, Photography or Intermedia Arts. D)Interdisciplinary. May be repeated up to 12 credits as topics vary.

CP277 - Intro Narrative Crew Productn 277-3,3 Introductory Narrative Crew Production. Student initiated production of a short narrative film based on original or adapted script. Each student will perform a particular crew role in consultation with the film's producers. Roles include: assistant director, production manager, still photographer, assistant camera, location sound crew, script supervisor, gaffer, grips, production assistants, etc. Activities include pre- and post-production, production management, research on crew roles, analysis of films and photography relevant to the topic, style, and genre of the proposed project, equipment demonstrations. Faculty review and approval of student film proposal required before course will be offered. Special approval needed from the department.

CP291 - Independent Experience in CP 291-1 to 6 Independent Educational Experience in Cinema or Photography. Individual research or projects in Cinema or Photography at the beginning or intermediate level. Special approval needed from the instructor.

CP300A - Media Arts, Photo 300A-2 Media Arts, Still Image and Photography. This course is a basic introduction to the practice of creating the still image that explores a range of haptic and optic-based methods and materials, spanning from basic drawing to basic chemical darkroom and digital printing processes. Students will practice an understanding of elements of art, principles of design, basic lighting design principles and color theory. Concepts of the still image to be explored with hands-on activities will range from Abstract & Representational Image to the Projected Image and from the Fixed Image to the Animated Image. Students will provide mobile smartphone device and drawing materials. Lab fee: \$35.

CP300B - Media Arts, Cinema 300B-2 Media Arts, Moving Image and Cinema. In this course, students will learn the fundamentals of creating a cinematic work that includes sound and video. Students will learn to think through formal choices that are made in-camera, select both sound and image from the environment; learn about lighting choices; compose as well as select misc-en-scene; and finish with editing and uploading work on the internet. The goal is to teach students to consider cinematic techniques as part of their overall artistic vision and meaning they wish to create. Technical aspects include introduction to lighting, Foley and Field Recording, DSLR, editing. Lab fee: \$35.

CP300C - Media Arts, Sound 300C-2 Media Arts, Sound. This course will provide conceptual and hands-on experience making media with a focus on critical arts practice. Emphasis will be placed on independent production from the creation of the project idea to post-production. Assignments and course content focus on a wide range of creative image and sound making guided by theoretical, aesthetic and cinematic principles. Students will be introduced to basic production and editing skills as well as produce assignments that reflect a breadth of media arts practice. This course will give students a solid foundation from which they can begin to develop their own artistic voice. Equipment Use Fee: \$35.

CP300D - Media Arts, Performance 300D-2 Media Arts, Performance. In this course, students will examine and generate performance based works that incorporates, plays with, and expands the still and moving image into artistic explorations that range from immersive narratives and environments, installations, theater and lucid performance, documentary practices, and poetic intersections of live art and the image. This course will give students a solid foundation from which they can begin to develop their own artistic voice and goals, especially consider the ways in which live performance brings the recorded still-moving image and sound into a new level of artistic exploration and meaning making of space, time, and experience. Equipment Use Fee: \$35.

CP301 - Pencil to Pixels 301-3 Basic Drawing: from Pencil to Pixels. Possessing the ability to translate visually rich ideas into accurate drawings is vital during the pre-production stage of media-making. Students will learn the principles of design and apply basic drawing strategies with pencil for subsequent digital media application. With the aid of both analog and digital tools, students will produce a portfolio of digital sketches, storyboards, and other useful prototypes to showcase a solid understanding of modeling, perspective and contour drawing. Lab fee: \$60.

CP310 - History of Photography 310-3 History of Photography. A survey of the important images, ideas, people, and processes that constitute the history of still photography. Covers photographic pre-history through modernity. Prerequisite: ENGL 102 with a grade of C or better. Screening fee: \$30.

CP320 - Foundations of Photography 320-4 Foundations of Photography. Foundations of photography provides instruction on the fundamental use of digital cameras and compositional strategies to make accurate exposures and aesthetically refined photographs. With the integration of Adobe Lightroom and Photoshop, students will utilize a digital image workflow to organize, to edit and to publish their own photographs. Students will supply personal digital still camera recording devices, laptop computer and Adobe Lightroom & Photoshop software. Prerequisite: CP 300A with a grade of C or better. Lab fee: \$60.

CP330 - Intermediate Photography 330-4 Intermediate Photography. This course builds upon the foundations of the digital software tools, camera functions and visual design principles gained in CP 320. Advancement of creative photographic expression and vision is explored through the production and analysis of singular, combined and manipulated images. Integration of film and digital processes via digital scanning technologies will supplement instruction on digital capture, color management and advanced printing strategies. Students will supply DSLR camera, laptop computer and Adobe Lightroom and Photoshop software. Prerequisite: CP 320 with a grade of C or better. Lab fee: \$60.

CP332 - Analog Photography 332-4 Analog Photography. Intermediate level course that introduces students to analog film and print processes in photography. The course will include technical and aesthetic fundamentals of traditional photographic practice that can include small and large camera formats. Students will gain experience with a range of black and white and color materials in both camera and darkroom applications. Prerequisite: CP 320 with a grade of C or better and pass faculty portfolio review or consent of department. Lab fee: \$60.

CP349 - The Cinema 349-3 The Cinema. The cinema as a communicative and expressive media. Study of film types illustrated by screenings of selected films. May be repeated as topics vary. Screening fee: \$30.

CP354I - Mass Media Amer Culture 354I-3 Mass Media Culture and American Studies. (University Core Curriculum) A study of the relationship between American Studies and American audio-visual culture. Sample topics include: the development of the 20th century American city with emphasis on the importance of mass media to that process; the American landscape in cinema; the American West. Students will learn the methods of American and cinema studies, and write papers and deliver oral presentations about those methods. No prerequisites. Screening fee: \$30.

CP358I - Intro to Peace Studies 358I-3 Introduction to Peace Studies. (University Core Curriculum) (Same as HIST 358I) Introduces students to Peace Studies as an interdisciplinary field, focusing on the history, theory, and practice of alternatives to violence. Considers the structural and systemic reasons for violence and war; the history of peace movements; the role of media in escalating violence and providing solutions. Lecture-discussion format with presentations by speakers from a variety of disciplines. No prerequisites.

CP360A - Media Studies Photo 360A-2 Media Studies, Still Image and Photo. This course develops a set of critical tools for analyzing the still image. Students will leave the course with a better understanding of cultural history and theory, and enhanced skills in written and oral communication about photography and other media arts. Screening fee: \$15.

CP360B - Media Studies Cinema 360B-2 Media Studies: Moving Image and Cinema. This course is designed to orient undergraduate students to the academic study of film. The basic premise of the course is that students will know a bit about popular Hollywood cinema (and how to enjoy it, through the process Roland Barthes terms "plaisir"), but not much about the full breadth of cinematic possibilities (and how to read these alternative practices critically, what Barthes labels "jouissance"). This course, then, intends to instill a sense of jouissance, or bliss, in its students for the full range of the film experience: classical Hollywood, independent, documentary, avant-garde, and international cinema. Screening fee: \$15.

CP360C - Media Studies: Sound 360C-2 Media Studies: Sound. This course will serve as an introduction to the history and theory of sound as a crucial element in the human experience as well as the arts, with emphasis on media arts practices from the 20th century into or own. Screening fee: \$15.

CP360D - Media Studies: Performance 360D-2 Media Studies: Performance. This course will serve as an introduction to the history and theory of acting and performance in the artistic impulse in general and media arts from the 20th Century to the present, in particular. We will also consider performance sociologically, as intrinsic to notions of the self and relationships with others and the role played by visual technologies in their construction. Screening fee: \$15.

CP370 - Topics in Cinema Studies 370-3 to 6 Topics in Cinema Studies. Topics course in cinema studies: history, theory, criticism. Sample topics: Film Authors, Film Genres, Film Movements, National Cinemas, American Film and Politics, Women and Cinema, Art and Cinema. Prerequisite: CP 360A, B, C, and D with grades of C or better or consent of instructor. Screening fee: \$30.

CP380 - Producing Independent Cinema 380-3 Producing Independent Cinema. This course will explore the inner workings of contemporary independent filmmaking practice. This course is designed to provide students with knowledge of all aspects of independent film production from development and financing to production and distribution. In addition to broadening your knowledge of independent cinema, this class will help to prepare you to enter a number of career pathways in the indie film business.

CP400 - Cinema Production 400-4 Cinema Production. Creative study and practice of the principles, techniques, and strategies of film production. Filming is done using HD/SLR cameras. In pre-production, students produce camera, lighting, and sound tests, and storyboards, filming schedules, and planning steps appropriate to their specific film projects. In production, students must experience the primary roles of film direction, cinematography, and sound recording. Students are encouraged to crew on each other's films to achieve these experiences and the various production assistance roles that arise. In post-production, films are finished to HD video. Film editing, color correction, and sound mixing are done using specified digital applications available in the College. Students purchase texts, digital camera card(s), incident light meter, portable hard drive(s) with specified connectivity, and any incidental materials specific to their projects. Prerequisite: CP 101 and CP 300B with grades of B or better, CP 300A, C and D with grades of C or better. Equipment use fee: \$60.

CP402 - Sensitometry 402-3 Sensitometry. An intermediate course that investigates technical and visual applications of the photographic process. The course includes the study of light sensitive materials, zone system, density parameters, practical chemistry and the creation of an archival photographic print. While color, motion picture, and digital materials are noted, black and white image making is the emphasis. Prerequisite: CP 332 with a grade of C or better. Lab fee: \$60.

CP404 - Lighting for Photography 404-3 Lighting for Photography. Basic concepts and essential principles of lighting techniques will be thoroughly explained and investigated. Fundamental challenges

in lighting arrangements and aesthetic considerations of both studio and location applications will be explored. Students will use a required text and provide photographic materials. Prerequisite: CP 330 with a grade of C or better or concurrent enrollment. Special approval needed from the department. Lab fee: \$60.

CP415 - Contemp Photo Criticism 415-3 Contemporary Photographic Criticism and Practice. Through screenings, readings, writings, field trips, and practical exercises, students will gain a broad-based knowledge of critical approaches to contemporary photography. Prerequisite: CP 310 and CP 360A with grades of C or better. Screening Fee: \$30.

CP421 - Experimental Photography 421-6 (3,3) Experimental Photographic Techniques. Experimental approaches to the creation of photographic images. Specific course content may include experimental techniques utilizing the camera, the darkroom, and a wide range of media. Techniques may include Ortho-litho printing, Wet-Plate Collodion photography, Modern Dryplate photography, Van Dyke Printing, Cyanotype + Digital Negative, and etc. Prerequisite: CP 330 with a grade of C or better and pass portfolio review. Lab fee: \$60.

CP431 - Applied Photography I 431-3 Applied Photography I. An introduction to professional photographic camera and lighting technique, applied theory and business responsibilities. Students will explore a range of commercial, editorial, industrial and fine art topics that will include architecture, portrait, product and fashion. Self-promotional elements: Web portfolios, publications of all types and gallery exhibitions will be introduced. Prerequisite: CP 330 with grade of C or better and pass faculty portfolio review or consent of the instructor. Lab fee: \$60.

CP432 - Applied Photography II 432-3 Applied Photography II. A second, advanced phase of applied photographic investigation based on the introduction outlined in CP 431. Students pursue their selected area(s) of photographic specialization and create a complete portfolio. Students will receive critical feedback from professionals during off-campus trips to photographic facilities in St. Louis and Chicago. Prerequisite: CP 431. Lab fee: \$60.

CP436 - Documentary Photography 436-3,3 Documentary Photography. Exploration of techniques, history and contemporary context of documentary photography. Each student will produce an in-depth documentary photographic project. 436 may be organized as a general documentary course or have a unifying topic. Example topics include: small town, politics or the environment. Print and electronic distribution of projects will be discussed. Prerequisite: CP 330 or consent of the department. Lab fee: \$60.

CP440 - New Media Production 440-3 New Media Production. The Internet is revolutionizing the way the world communicates. Students will investigate how the Internet works, as well as explore relationships among design, technology, and user experience while developing web sites, information architectures, interface behaviors, and navigation systems. Topics include: XHTML/CSS, Javascript, open source software, as well as incorporating sound, video, and images into web pages. Prerequisite: CP 360A, B, C, & D with grades of C or better or concurrent enrollment. Equipment Fee: \$60.

CP441 - History of New Media 441-3 History of New Media. This course is an overview of the work and ideas of artists who have explored new interactive and interdisciplinary forms, as well as engineers and mathematicians who have developed information technologies and influential scientific and philosophical ideologies that have influenced the arts. Seminal artistic movements and genres will be explored, such as: the Futurists, Bauhaus, Happenings, video art, etc. Screening fee: \$30.

CP450 - Narrative Film Production 450-3 Narrative Film Production. Narrative film-making for individual filmmakers or groups, from pre-production through to completion of filming, ready for post-production, potentially in CP 496 Post-Production Workshop, in a subsequent semester. Study/practice all facets of and techniques and strategies for pre-production/production phases. Access and instruction provided to 16mm synchronous sound cameras, HD video cameras, film lighting and sound recording equipment. Students are responsible for purchase of all materials and outside services and fees. Prerequisite: CP 360A, B, C, D and CP 400 with grades of C or better. Equipment Use Fee: \$75.

CP451 - Writing the Short Film 451-3 Writing the Short Film. This creative writing course introduces the student writer to the discipline of screenwriting for short films. Readings, screenings, class presentations, in-class critiques, and a series of structured assignments give writers the opportunity to practice critique skills and the craft of writing and produce a script for an 8- to 12-minute film that could be produced here

in our film school environment. Prerequisite: ENGL 102 and CP 101 with a grade of B or better, with concurrent enrollment in CP 101 allowed. Screening fee: \$30.

CP452 - Screenwriting 452-3 Screenwriting. A study of screenplay structure for feature-length, classically-structured scripts. Includes treatments, scene-by-scene outlines, character development, and script formatting. Students are required to create original script material. Prerequisite: CP 451 with a grade of C or better. Screening fee: \$30.

CP453 - Experimental Production 453-3 to 6 Experimental Production. An introductory course aimed at students who wish to explore and expand the artistic and creative possibilities of their work. Students will engage in exercises that focus on developing conceptual creativity as well as technical skill. May be repeated as topics differ. Sample topics include: Optical Printing, Handmade Film, Collage, Digital Compositing, Experimental Animation. Prerequisite: CP 300B with a grade of B or better. Equipment usage fee: \$60.

CP454 - Animation Stand 454-3 Approaches for the Animation Stand. This studio production course provides the student animator the opportunity to explore selected 2-D animation approaches, concepts, and techniques using the venerable Oxberry film animation stand. The stand has been modified and to film with a HD SLR camera and software. The approaches, concepts, and techniques selected by the instructor may include but not be limited to various forms of hand-drawn or cut-out animation, cel animation, and rear-lit animation. Students purchase text(s), portable hard drive(s), art supplies, and any additional incidentals required by individual practical or aesthetic choices. Restricted to sophomore standing or higher. Equipment use fee: \$30.

CP457 - Documentary Production 457-3 Documentary Production. This course will provide conceptual and hands-on experience for researching, writing and producing documentary video. This course will emphasize conceptual processes from invention of the documentary idea to post-production. Students will apply contemporary methods of criticism to the production process with particular emphasis on revision and audience. Prerequisite: CP 400 with a grade of C or better or CP 300A, B, C, and D all with grades of B or better. Equipment usage fee: \$60.

CP460 - Survey of Film History 460-3 to 6 (3,3) Survey of Film History. Intensive study of particular periods of cinema history, including technological developments, national and international movements, aesthetic traditions, economic and political determinations, and concerns of film historiography. May be taken twice, if topic differs. Prerequisite: CP 101 and CP 360B with grades of C or better, or consent of instructor. Screening fee: \$30.

CP462 - Int'l Documentary Film 462-3 History and Theory of International Documentary Film. This course will investigate the history, theory and aesthetics of non-fiction cinema and media culture. Developments in international non-fiction cinema will be discussed in relation to technology, history, politics of visual culture, and the continuous questioning of our ability to understand and change reality. We will study how documentary film has been continuously radicalized with newer media technologies. Prerequisite: CP 101 and CP 360B with grades of C or better. Screening fee: \$30.

CP463 - History Experimental Film 463-3 History of Experimental Film. Study of experimentation in film from the early 20th century to the present, beginning with the international avant-garde of the 1910s and 1920s. Focus on non-commercial and radical use of the medium, including abstract, cameraless, animated, trance, underground, and structural films. Study of expanded cinema, among other trends, as well as an introduction to experimentation in video. Prerequisite: CP 101 and CP 360B with grades of C or better. Screening fee: \$30.

CP464 - Understanding Animation 464-3 Understanding Animation: History, Theory & Technology. This course is an introduction to the history of animation, its practitioners and its technological developments. The course introduces students to the aesthetics of the animated image and their relation to animation's unique ability to communicate. Additionally, the course discusses some of the major theoretical constructs surrounding the study of animation. Screening fee: \$30.

CP465 - Short Cinema Studies 465-3 Short Cinema Studies. A study of short format narrative (including the short story, the short poem, and the one-act play) as a method for approaching the history and criticism of the short film. Students will learn the methods of film and literary studies, and write papers

and deliver oral presentations about those methods. Prerequisite: CP 360B with a grade of C or better. Screening fee: \$30.

CP466 - Film Styles and Genres 466-3 to 6 (3,3) Film Styles and Genres. Intensive study of a specific body of films grouped by similarities in style, genre, period, or cultural origin. Emphasis on historical, theoretical, and critical issues. Topics vary. Sample topics: Science Fiction Film; Film Noir, French New Wave; Third World Cinema; Surrealism in Film. May be taken twice, if topic differs. Students purchase texts. Prerequisite: CP 101 with a grade of B or better, consent of instructor. Screening fee: \$30.

CP467 - Film Authors 467-3 to 6 (3,3) Film Authors. Intensive study of the work of one or more film authors (directors, screenwriters, etc.). Emphasis is on historical, theoretical, and critical issues. Topics vary. Sample topics: the films of Alfred Hitchcock; the films of Jean Renoir; the films of Andrei Tarkovsky. May be taken twice, if the topic differs. Students purchase texts. Prerequisite: CP 360B with a grade of C or better or consent of instructor. Screening fee: \$30.

CP468 - Film Criticism 468-3 Film Criticism. This course attempts to re-invent film criticism, forging a middle-ground between academic, theoretical writing about the cinema and popular journalism. Students will learn how to apply the methods of academic film studies to films in current release, designed by their studios to make money and win Oscars. Students will learn how to think, write, and speak with clarity and sophistication about films in a timely manner, as they are being discussed by the general population. Prerequisite: CP 101 with a grade of B or better. Screening fee: \$30.

CP469 - Queer Visual Culture 469-3,3 Queer Visual Culture. (Same as WGSS 440) Course discusses aspects of the aesthetics, history, theory and politics of media representations of gender and sexuality. Cultural texts from one or a combination of media forms, genres, historical periods, and platforms, will inform the historical and theoretical consideration of media representations of gender and sexual variation with a special interest on their bearings upon the present moment. May be repeated, if topics vary.

CP470A - Adv Topics Cinema Studies 470A-3 to 12 (3,3,3,3) Advanced Topics Cinema Studies. An advanced topics course in cinema history, theory, and criticism. Sample topics: visualizing the body, feminist film theory, surveillance and the cinema. May be repeated if topics differ. No more than twelve (12) credit hours combined from 470 Advanced Topics courses counted in the undergraduate Cinema and Photography degree. Prerequisite: CP 360A, B, C, and D with grades of C or better, or consent of instructor. Screening fee: \$30.

CP470B - Adv Topics Film Production 470B-3-12 (3,3,3,3) Advanced Topics Film Production. An advanced topics course in film production. Sample topics: location lighting, production management, film sound workshop. May be repeated if topics differ. No more than twelve (12) credit hours combined from 470 Advanced Topics courses counted in the undergraduate Cinema and Photography degree. Prerequisite: CP 400 with a grade of C or better, or consent of instructor. Screening fee: \$60.

CP470C - Advanced Topics Photography 470C-3-12 (3,3,3,3) Advanced Topics in Photography. An advanced topics course in photography. Sample topics: Medium Format Photography, Zone System, Large Format Photography. May be repeated if topics differ. No more than twelve (12) credit hours of 470C Advanced Topics courses may be counted in the undergraduate Cinema and Photography degree. Prerequisite: CP 332 with a grade of C or better or consent of the department. Lab fee: \$60.

CP470D - Interdisciplinary Topics 470D-3-12 (3,3,3,3) Advanced Topics Interdisciplinary Studies. Advanced interdisciplinary studies in cinema, photography or new media. Sample topics: visual perception, ethics of image making, 3-D filmmaking. May be repeated if topics differ. No more than twelve (12) credit hours combined from 470 Advanced Topics courses counted in the undergraduate Cinema and Photography degree. Restricted to junior standing or higher or consent of department. Screening fee: \$30.

CP470E - Topics History Photography 470E-3-12 (3,3,3,3) Topics in the History of Photography. Focused study on special topics in the history of photography. Sample topics: The Mythic American Image; The History of Color Photography; African American Photographers; The Appropriated Image; The History of the Image in Social Documentary. Prerequisite: CP 310 with a grade of C or better, or consent of instructor. May be repeated as topics vary. Screening fee: \$30.

CP470F - Topics in Photography 470F-3-12 (3,3,3,3) Topics in Photography. A topics course in photography. Sample topics: the Business of Photography, Environmental Portrait, Image and Text. May be repeated if topics differ. No more than twelve (12) credit hours of 470F may be counted in the undergraduate Cinema and Photography degree. Prerequisite: CP 320 with a grade of C or better or consent of the department. Lab fee: \$60.

CP470G - Intermed Topics Photography 470G-3-12 (3,3,3,3) Intermediate Topics in Photography. An advanced topics course in photography. Sample topics: Expanded Range Photography, Advanced Digital Printing, Mobile Photography. May be repeated if topics differ. No more than twelve (12) credit hours of 470G may be counted in the undergraduate Cinema and Photography degree. Prerequisite: CP 330 with a grade of C or better or consent of instructor. Lab fee: \$60.

CP470H - Honors Adv Cinema Studies 470H-3 to 12 (3,3,3,3) Honors Advanced Topics Cinema Studies. (University Honors Program) An Advanced topics course in cinema history, theory, and criticism. Sample topics: film criticism, whiteness and masculinity, surveillance and the cinema. May be repeated if topics differ. No more than 12 credits combined from 470 Advanced Topics courses counted in the undergraduate Cinema and Photography degree. Prerequisite: CP 360B with a grade of C or better, or consent of instructor. Screening fee: \$30.

CP470I - Topics Film Production 470I-3-12 (3,3,3,3) Topics in Film Production. An advanced topics course in film production. Sample topics: Proto-Cinematic Production, Videography. May be repeated if topics differ. No more than twelve (12) credit hours of CP 470I Topics in Film Production may be counted in the undergraduate Cinema and Photography degree. Prerequisite: CP 300B with a grade of C or better, or consent of instructor. Equipment use fee: \$60.

CP470W - Advanced Topics Screenwriting 470W-12 (3,3,3,3) Advanced Topics Screenwriting. An advanced topics course in screenwriting. Sample topics: experimental script to screen, adaptation, comedy, autobiography. May be repeated if topics differ. No more than twelve (12) credit hours combined from 470 Advanced Topics courses counted in the undergraduate Cinema and Photography degree. Prerequisite: CP 451 with C or better or consent of department. Screening fee: \$30.

CP471 - Directing 471-3 Directing. This course explores ideas, methods and theories of film directing with emphasis on two areas: directing filming-scene construction, coverage, staging, blocking and camera perspective; directing acting-audition, casting, rehearsal, and performing for camera. Students work in groups on a series of focused directing, acting and filming projects. Prerequisites: CP 400 with a grade of C or better. Restricted to junior standing or higher. Equipment Use Fee: \$60.

CP472 - Creative Production Cinema 472-6 (3,3) Problems in Creative Production: Cinema. Intensive examination and problem solving, through readings, screenings, and filmmaking, of a cinematic genre, style, or technical challenge. Theory is combined with practice. Individual and group projects. Sample problems: cinematography, digital filmmaking, 35mm filmmaking, film as performance, optical printing. May be repeated once if topic differs. Prerequisite: CP 300A, B, C and D with grades of C or better. Restricted to junior standing or higher. Equipment usage fee: \$60.

CP473 - Adv Experimental Strategies 473-3 to 6 Advanced Experimental Strategies. An intensive production course for students who want to expand their creative possibilities and develop depth in their conceptual understanding of experimental processes and strategies in film, video or new media. May be repeated as topics differ. Sample topics include: Live Art/Generative Art, Advanced Film Arts, Poetic Autobiography, 3-D filmmaking, Experimental Animation. Prerequisite: CP 300A, B, C & D with grades of C or better. Restricted to junior standing or higher. Equipment usage fee: \$60.

CP474 - Optical Printing 474-3 Optical Printing. A creative, frame-by-frame study and practice of 16mm filmmaking. Use of 16mm optical printer to complete projects, techniques include: fades, dissolves, freeze frames, step printing, multi-frame presentations, frame magnification, Super 8 enlargement to 16mm, matt construction. Students process 16mm and Super-8 film. Prerequisite: CP 400 with a grade of C or better. Equipment use fee: \$60.

CP475 - Cinematography 475-3 Cinematography. The course explores the new visual expression possibilities of High Definition digital medium as compared with traditional film. Aiming to understand the evolving digital motion imaging technology, the course focuses on its aesthetic and technical applications in the art of cinematography in areas of image construction, exposure control, lighting and

color manipulation, and post-production workflow. Prerequisite: CP 400 with a grade of C or better. Restricted to junior standing or higher. Fee: \$60.

CP491 - Individual Study 491-1 to 9 Individual Study in Cinema, Photography or New Media. Advanced individually directed research in film, photography or new media: history, theory, or aesthetics. No more than six hours of 491, 492, 494, 495 and 497 combined may count toward the first 30 hours in the Cinema and Photography major. Not for graduate credit. Special approval needed from the instructor.

CP492 - Practicum 492-1-3 Practicum. Practical experience in the presentation of photographic theory and procedures. No more than six hours of 491, 492, 494, 495 and 497 combined may count toward the first 30 hours in the Cinema and Photography major. Not for graduate credit. Special approval needed from the department. Mandatory Pass/Fail.

CP494 - Internship Program 494-1-12 Internship Program. Cinema & Photography students are placed in summer internships in various cities to gain experience and insight into their chosen fields. Each enrollment is limited to a maximum of 6 credit hours. No more than six hours of 491, 492, 494, 495 and 497 combined may count toward the first 30 hours in the Cinema and Photography major. Not for graduate credit. Special approval needed from the department.

CP495 - Internship 495-1 to 12 Internship. Credit for internship with professional film or photographic units. Each enrollment is limited to a maximum of six credit hours. No more than nine hours of CP 491, 494, 495 or 497 combined may count toward the Cinema & Photography major requirements. Mandatory Pass/Fail grading. Not for graduate credit. Special approval needed from the department.

CP496 - Post-Production Workshop 496-3 Post-Production Workshop. Post production on a 10-12 minute film/video in any genre. Students must have all dailies prior to enrollment. Study of editing practice and aesthetics of picture and sound editing, design, ADR, foley, and mixing through hands-on editing, reading, screenings, and critique. The department retains a copy of the final project. Editing facilities are provided. Prerequisite: CP 400 with a grade of C or better or consent of instructor. Equipment Usage Fee: \$60.

CP497A - Independent Projects in Cinema 497A-1-9 Independent Projects in Cinema. Individual supervised motion picture production project by an individual student or group of students. No more than six hours of 491, 492, 494, 495 or 497 combined may count toward the first 30 credit hours required for the Cinema & Photography major. Not for graduate credit. Special approval needed from the instructor. Equipment use fee: \$60.

CP497B - Independent Projects in Photo 497B-1-9 Independent Projects in Photography. Individually directed projects in still photography. No more than six hours of 491, 492, 494, 495 or 497 combined may count toward the first 30 credit hours required for the Cinema & Photography major. Not for graduate credit. Special approval needed from the instructor. Lab fee: \$35.

CP498 - Photography Portfolio 498-3 Photography Portfolio. Preparation of a portfolio directed at a specific arena of professional practice or in preparation for application to graduate study. Completion of the course requires public exhibition of portfolio. The course will include a series of seminar style presentations imparting important career skills (self-marketing and business practices). Required for all photography students not taking CP 432. To be taken during the last year in residence. Prerequisites: CP 404 or CP 431 with grades of C or better and pass faculty portfolio review. Lab fee: \$60.

CP499P - Senior Thesis Production 499P-4 Senior Thesis-Production. Individually supervised senior thesis production under a cinema faculty member. Opportunities for enrollment are limited. Normally taken during last term in residence. The department will retain a copy of the thesis, usually on video or DVD. Not for graduate credit. Prerequisite: CP 400 with a grade of C or better. Restricted to senior standing. Special approval needed from the instructor. Course fee: \$60.

CP499S - Senior Thesis Studies 499S-4 Senior Thesis-Studies. Completion of a critical or research paper as thesis work under the supervision of a cinema faculty member. Opportunities for enrollment are limited. Normally taken during last term in residence. The department will retain a copy of the thesis. Not for graduate credit. Prerequisite: CP 360A, B, C and D with a grade of C or better. Restricted to senior standing. Special approval needed from the instructor.

CP499W - Senior Thesis-Screenwriting 499W-4 Senior Thesis-Screenwriting. Writing of a screenplay as a thesis work under the supervision of a cinema faculty member. Opportunities for enrollment are limited. Normally taken during last term in residence. The department will retain a copy of the thesis. Not for graduate credit. Prerequisite: CP 452 with a grade of C or better and consent of instructor. Restricted to senior standing. Special approval needed from the instructor.

CP601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Cinema and Photography Faculty

Aguiar, Angela J., Associate Professor, Ph.D., University of Texas, Austin, 2005.
Boruszkowski, Lilly A., Associate Professor, Emerita, M.F.A., Northwestern University, 1980.
Bursell, Cade, Associate Professor, M.F.A. San Francisco State University, 2003.
Chase, Jennida, Assistant Professor, M.F.A., Virginia Commonwealth University, 2009.
Cocking, Loren D., Assistant Professor, Emeritus, M.A., Ohio State University, 1969.
Covell, Michael D., Assistant Professor, Emeritus, M.F.A., Ohio University, 1975.
Gilmore, David A., Associate Professor, Emeritus, M.F.A., Ohio University, 1969.
Kapur, Jyotsna, Professor and Chair, Ph.D., Northwestern University, 1998.
Kolb, Gary P., Professor, Emeritus, M.F.A., Ohio University, 1977.
Logan, Fern, Associate Professor, Emerita, M.F.A., School of the Art Institute of Chicago, 1993.
Martinez, Antonio, Associate Professor, M.F.A., East Carolina University, 2005.
Metz, Walter C., Professor, Ph.D., University of Texas, Austin, 1996.
Overturf, Daniel V., Professor, M.F.A., Southern Illinois University Carbondale, 1983.
Roddy, Jan P., Associate Professor, Emerita, M.F.A., University of Illinois, 1987.
Rowley, R. William, Associate Professor, M.F.A., University of Iowa, 1974.
Smith, Alison, Visiting Assistant Professor, M.F.A., University of Georgia, Athens, 2010.
Spahr, Robert, Associate Professor, M.F.A., Parsons School of Design, 1991.
Swedlund, Charles A., Professor, Emeritus, M.S., Illinois Institute of Technology, 1961.
Tudor, Deborah, Associate Professor and Associate Dean, Ph.D., Northwestern University, 1992.
Vratil, Dru, Associate Professor, M.F.A., University of Iowa, 1998.
Zhou, Hong, Associate Professor, M.F.A., York University, Toronto, Canada, 2000.

Criminology and Criminal Justice

The Bachelor of Arts degree with a major in Criminology and Criminal Justice meets the objectives of students interested in law enforcement, the courts, corrections, juvenile justice, criminal behavior, and other aspects of crime and criminal justice.

The curriculum is designed to provide students with a broad view of crime and criminal justice. Building on the fundamental knowledge developed in core courses and a set of electives, students can select from a variety of courses to gain in-depth, specialized knowledge about their particular areas of interest within the curriculum. To supplement their educational experience, students may consider coursework or a minor in other fields such as: accounting, anthropology, forestry, geography, Latino and Latin American studies, political science, psychology, sociology, or Spanish. These courses are best chosen in consultation with faculty guidance, depending on interests and career goals. This approach provides a sound foundation in Criminology and Criminal Justice while allowing the flexibility necessary to accommodate individual interests and needs.

A field internship placement may be an important element in the program and is encouraged for interested students who meet departmental criteria.

Bachelor of Arts Degree in Criminology and Criminal Justice, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39-41
College of Liberal Arts Academic Requirements	15
Requirements for Major in Criminology & Criminal Justice	42
Core Requirements: CCJ 201, CCJ 290, CCJ 310 or CCJ 360, CCJ 316, CCJ 317 ¹	15
CCJ Electives: 27 hours, with at least 12 hours from 400-level CCJ courses	27
Electives	22-24
Total	120

¹ Students who transfer credit in fulfillment of the CCJ 316 requirement including course substitutions must complete a CCJ course that is designated as fulfilling the CoLA Writing-Across-the-Curriculum requirement as part of their Criminology and Criminal Justice Electives.

Completion of CCJ 201 and CCJ 290 (or consent of the instructor) is required for taking many 300- or 400-level Criminology and Criminal Justice courses. In addition, completion of CCJ 316 (or consent of instructor) is required for taking most 400-level Criminology and Criminal Justice courses. Prerequisites may be associated with individual courses; refer to the catalog description of the specific course.

No more than three hours of CCJ 395 can be counted toward the major.

At least 24 of the credit hours applied toward completion of the requirements of a B.A. in Criminology and Criminal Justice must have been earned in Criminology and Criminal Justice courses offered at SIU Carbondale.

A student may substitute POLS 340 for CCJ 302; SOC 372 for CCJ 290; PSYC 211, SOC 312, or POLS 300 for CCJ 316; SOC 308 or PSYC 466 for CCJ 317.

Criminology and Criminal Justice Minor

A minor in Criminology and Criminal Justice consists of 15 hours of Criminology and Criminal Justice courses, which must include CCJ 201 and CCJ 290. At least nine of the 15 hours must consist of Criminology and Criminal Justice courses taken at SIU Carbondale.

Criminology and Criminal Justice Courses

CCJ201 - Intro Criminal Justice System 201-3 Introduction to the Criminal Justice System. [IAI Course: CRJ 901] A survey of the agencies and processes involved in the administration of criminal justice including underlying ideologies, procedures, fundamental legal concepts, and the roles and functions of police, courts, and correctional services.

CCJ203 - Crime/Justice/Soc Diversity 203-3 Crime, Justice and Social Diversity. (University Core Curriculum) An examination of how social heterogeneity and inequality influence the processes involved in the definition and regulation of behavior through law, particularly the criminal law. Factors such as race,

ethnicity, gender and class are related to definitions of crime and justice, and to the likelihood of being the victim of crime. The differential influence of the operations and outcomes of the criminal justice system on diverse groups in U.S. society is emphasized.

CCJ290 - Intro to Criminological Theory 290-3 Introduction to Criminological Theory. [IAI Course: CRJ 912] A multidisciplinary study of the etiology and patterning of offender behavior and crime.

CCJ302 - Intro: CJ Administration 302-3 Introduction to Criminal Justice Administration. An introduction to the principles of administration and organization of criminal justice agencies. Prerequisite: CCJ 201 and 290 or consent of instructor.

CCJ303 - Criminal Investigation 303-3 Criminal Investigation. An introduction to the fundamentals of the modern criminal investigative process, the application of current forensic technologies, and the subsequent identification and court processes used to bring suspects to justice.

CCJ306 - Policing in America 306-3 Policing in America. An examination of the police as part of society's official control apparatus. Major topics include historical development of the police, role of the police in the criminal justice system, functions and effectiveness of the police, and the relationship of the police to the communities they serve. Prerequisite: CCJ 201 and 290 or consent of instructor.

CCJ310 - Intro to Criminal Law 310-3 Introduction to Criminal Law. (Same as PARL 315) An examination of the general principles that apply to all criminal offenses and the specific elements of particular crimes that prosecutors must prove beyond a reasonable doubt. Topics include actus reus, mens rea, concurrence, causation, and harmful result; the defenses of justification and excuse; the doctrines of complicity and inchoate (unfinished) crimes; and the elements of major crimes against persons, property, habitation, public order and morals, and the state.

CCJ316 - Intro: CJ Research 316-3 Introduction to Criminal Justice Research. A basic introduction to the scientific perspective, relationship of research and theory, research design, measurement issues, reporting of research and program evaluation. Emphasis on problems peculiar to criminological research. Satisfies the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: CCJ 201 and 290 or consent of instructor.

CCJ317 - Intro to CJ Statistics 317-3 Introduction to Criminal Justice Statistics. A survey of the techniques to analyze the types of data used in criminal justice and criminology research. The class has a 'practitioner' orientation, emphasizing how to understand, interpret, and use statistics. A variety of widely used techniques will be covered, including descriptive, univariate, and bivariate analyses. Prerequisite: CCJ 201, CCJ 290, and (CCJ 316 or PSYC 211) or consent of instructor.

CCJ320 - Prosecution & Adjudication 320-3 Prosecution and Adjudication. An examination of the structure and process involved in the prosecution, adjudication, and sentencing of criminal defendants. The exercise of prosecutorial and judicial discretion is analyzed, with emphasis placed on understanding the influence of legal, organizational, and environmental contexts on decision-making. Prerequisite: CCJ 201 and 290 or consent of instructor.

CCJ325 - Special Topics in CCJ 325-3 Special Topics in Criminology and Criminal Justice. An in-depth study of topics selected from current issues in criminology and criminal justice. Examples include "media and crime," "international comparisons of criminal justice," "qualitative criminology," and "environmental criminology." May be repeated for a maximum of six credits.

CCJ340 - Comparative CCJ 340-3 Comparative Criminology and Criminal Justice. A comparative exploration of crime, law and criminal justice systems in different societies around the world. Transnational crime and criminal justice are also discussed. General patterns and trends are explored, with specific exemplary cases examined.

CCJ344 - Drug Abuse and CJ System 344-3 Drug Abuse and the Criminal Justice System. A comprehensive study of types of drugs, drug impact on the American culture, legal and illegal uses of drugs, offenses related to drug abuse, reaction of the criminal justice system to drugs and drug abusers, and the treatment and prevention programs coping with drug abuse.

CCJ360 - Law and Social Control 360-3 Law and Social Control. An introduction to key social science theories and research traditions in the study of law and non-legal social control. Explores patterns and

dynamics of law as an instrument and outcome of social control, and the processes and structures underlying law as an outcome and instrument of social change.

CCJ370 - Terrorism & Counter-Terrorism 370-3 Terrorism and Counter-Terrorism. (Same as POLS 370) Using an interdisciplinary social science perspective, an analysis of the history, sources and consequences of domestic and international terrorism and the response by policymakers. Topics include tactics, goals, recruitment and financing of terrorists; the use of military force and legal institutions in dealing with terrorism; comparison of different state responses to terrorism; and international law, human rights, and counterterrorism.

CCJ374 - Juvenile Justice 374-3 Juvenile Justice. [IAI Course: CRJ 914] An examination of the statutory bases which distinguish delinquency from adult crime and the juvenile justice system from the criminal justice systems. Emphasis placed on the rationale for treating juveniles accused of crime differently than their adult counterparts. Assesses the distinct juvenile justice system that has evolved in the U.S. to prevent and respond to juvenile offending.

CCJ384 - Introduction to Corrections 384-3 Introduction to Corrections. [IAI Course: CRJ 911] An examination of the historical context, philosophical concepts, and major developments which have shaped corrections in the United States. Various sentencing options, correctional approaches and programs, the role of corrections in the larger criminal justice system, and contemporary correctional issues are addressed. Prerequisites: CCJ 201 and 290 or consent of instructor.

CCJ390 - Readings in CCJ 390-1 to 6 Readings in Criminology and Criminal Justice. In-depth, introductory and advanced readings in areas not covered in other Criminology and Criminal Justice courses. The student must submit a statement describing the topic and relevant reading materials to the faculty member sponsoring the student's readings. May re-enroll for a maximum of six credits. (Maximum 3 semester hours per term) Prerequisite: CCJ 201, 290 and consent of instructor.

CCJ395 - Supervised Field Exp in CCJ 395-3 to 15 Supervised Field Experiences in Criminology and Criminal Justice. Familiarization and direct experience in applied settings. Under supervision of faculty and adjunct staff, the student assumes a student-participant role in the criminal justice agency. Student must submit internship application during the first thirty days of the preceding spring, summer, or fall semester. Mandatory pass/fail. Restricted to CCJ major. CCJ students may participate in only one internship under the CCJ 395 designation. Prerequisites: CCJ 201, 290, and 12 additional hours of Criminology and Criminal Justice courses at SIU Carbondale; minimum GPA of 2.75 overall and in CCJ courses through the semester prior to the internship experience, and consent of instructor.

CCJ408 - Criminal Procedure 408-3 Criminal Procedure. An introduction to the procedural aspects of criminal law pertaining to police powers in connection with the laws of arrest, search and seizure, the exclusionary rule, civil liberties, eaves-dropping, confessions, and related decision-making factors. Prerequisite: CCJ 201 and CCJ 290 or consent of instructor.

CCJ410 - Policing Communities 410-3 Policing Communities. A study of the theories underlying modern police reform, how these theories have altered practice, the challenges of implementing and sustaining police reform, and the outcomes of such efforts. Prerequisites: CCJ 201, CCJ 290, and (CCJ 316 or PSYC 211), or consent of instructor.

CCJ411 - Assessment & Prediction 411-3 Risk Assessment and Prediction in Criminal Justice. An examination of the theories, application, and research relevant to the assessment and prediction of negative events and threats in the criminal justice system. The principles guiding the identification, classification, evaluation, and potential interventions of high risk individuals and groups will be covered. The course also reviews the evidence of effectiveness associated with classification and assessment tools. Prerequisites: CCJ 201, CCJ 290, and (CCJ 316 or PSYC 211), or consent of instructor.

CCJ415 - Prevention: Crime & Delinquency 415-3 Prevention of Crime and Delinquency. Multidisciplinary analysis of the functions, goals, and effectiveness of measures to forestall delinquency and crime. Etiology of delinquent behaviors as related to community institutions such as police, courts, corrections, mental health clinics, schools, churches, and citizen groups. Prerequisite: CCJ 201, CCJ 290 and (CCJ 316 or PSYC 211), or consent of instructor.

CCJ418 - Criminal Violence 418-3 Criminal Violence. An examination of historical, comparative, cultural and structural aspects of homicide, robbery, rape and assault. Explores patterns, trends and key correlates. Prerequisite: CCJ 201, CCJ 290 and (CCJ 316 or PSYC 211), or consent of instructor.

CCJ460 - Women, Crime and Justice 460-3 Women, Crime, and Justice. (Same as SOC 461 and WGSS 476) A study of women as offenders, as victims, and as workers in the criminal justice system.

CCJ461 - White-Collar Crime 461-3 White-Collar Crime. An examination of the physical and financial harm caused by wayward corporations and business employees from both theoretical and empirical perspectives. Emphasis is placed on ethics, theory, legal decision-making and the regulatory monitoring and control of illegal corporate activity.

CCJ462 - Victims of Crime 462-3 Victims of Crime. (Same as SOC 462) An examination of the extent and nature of victimization, theories about the causes of victimization, the effects of crime on victims and services available to deal with those effects, victims' experiences in the criminal justice system, the victims' rights movement, and alternative ways of defining and responding to victimization.

CCJ473 - Juvenile Delinquency 473-3 Juvenile Delinquency. (Same as SOC 473) An in-depth study of theories of delinquency, analytical skills useful in studying delinquent offenders, systematic assessment of efforts at prevention, and control and rehabilitation in light of theoretical perspectives. Prerequisite: CCJ 201, CCJ 290 and (CCJ 316 or PSYC 211), or consent of instructor.

CCJ480 - Effect Correct Practices 480-3 Effective Correctional Practices. (Same as PSYC 480) Exploration and evaluation of correctional intervention strategies developed for the sentencing of adjudicated persons. Particular emphasis on examining empirical research literature on effective correctional practices, including programs currently implemented in institutional setting, alternatives to institutional corrections, and community based programs. Prerequisites: CCJ 201, CCJ 290, and (CCJ 316 or PSYC 211), or consent of instructor.

CCJ490 - Independent Study in CCJ 490-1 to 6 Independent Study in Criminology and Criminal Justice. Supervised readings or independent research projects in various aspects of crime control, treatment of offenders, and the management of criminal justice programs and agencies. May re-enroll for a maximum of six credits. (Maximum 3 semester hours per term) Prerequisite: CCJ 201, CCJ 290, and (CCJ 316 or PSYC 211), and consent of the instructor.

CCJ492 - Contemporary Issues in CCJ 492-3 Contemporary Issues in Criminology and Criminal Justice. A forum, geared toward seniors majoring in Criminology and Criminal Justice, that focuses on criminal justice issues of concern to students and faculty. May re-enroll for a maximum of 6 credits. (Maximum 3 semester hours per term) Satisfies the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: CCJ 201, CCJ 290, (CCJ 316 or PSYC 211), or consent of instructor. Past topics include: Crime and Place, Consequences of Mass Incarceration, Myth-busting in Criminology and Criminal Justice, and Race and Crime.

CCJ500 - Foundations of CJ 500-3 Foundations of Criminal Justice. An exploration of the nature and scope of the criminal justice process. Criminal justice operations and behavior are assessed in context of the major theoretical, historical, normative and organizational influences found in the field.

CCJ504 - Criminological Theory 504-3 Criminological Theory. Multidisciplinary study of biogenic, psychogenic and sociogenic explanations for criminal behavior relevant to policy-making and practice in criminal justice. Special approval needed from the instructor.

CCJ505 - The Nature of Crime 505-3 The Nature of Crime. This course examines the extent, distribution, and correlates of criminal offending and patterns of crime. It emphasizes the review and application of recent empirical research to the development of theories on crime causation, as well as public policy and crime prevention programs.

CCJ510A - Research in CCJ 510A-3 Research in Criminology & Criminal Justice: Methods & Concepts. Principles and methods of scientific inquiry are examined. Special emphasis is applied to research design and data collection issues.

CCJ510B - Data Analysis & Interpretation 510B-3 Data Analysis & Interpretation. Data management, univariate, bivariate, and multivariate analyses, and specialized concerns with criminal justice data are emphasized.

CCJ510C - Adv Multivariate Stats 510C-3 Advanced Multivariate Statistics. This course provides the foundations of multivariate analyses, including assumptions about data distributions and regression diagnostics. Students will be introduced to various multivariate methods such as time series, structural equation modeling, regression with limited dependent variables, and hierarchical linear modeling. Prior graduate instruction in correlation and linear regression is essential. Prerequisite: CCJ 510B or equivalent.

CCJ517 - Advanced Topics 517-3 to 6 Advanced Topics in Quantitative Research. This course provides detailed coverage of quantitative analytic procedures used in criminology and criminal justice. Specific topics covered will vary (students should consult instructor). Sample topics: advanced ordinary least squares, time series analysis, structural equation modeling, and analysis of limited dependent variables. Prior knowledge of correlation and regression is essential. Prerequisite: CCJ 510A and B.

CCJ518 - Qualitative Research Methods 518-3 Qualitative Research Methods. An introduction to qualitative research techniques (i.e., interviewing, ethnography, in situ observation, case studies). Provides students with an epistemological foundation for understanding the nature and purpose of these methods. Opportunities for practicing the techniques are provided. Prerequisite: CCJ 510A.

CCJ519 - Independent Study 519-1 to 12 Independent Study. Readings or independent research supervised by a faculty member in a selected area of criminal justice or criminology. May be repeated. Only 12 credits may be counted toward any post-baccalaureate studies in CCJ. Special approval needed from a faculty sponsor.

CCJ520 - Readings in CCJ 520-1 to 3 Readings in Criminology and Criminal Justice. In-depth advanced readings in areas not covered in other graduate criminology and criminal justice courses. The student must submit a statement describing the topic and relevant reading materials to the faculty member sponsoring the student's readings. May re-enroll for a maximum of nine credits. (Maximum 3 semester hours per term).

CCJ540 - Seminar Crime Prevention 540-3 Seminar in Theory and Practice of Crime Prevention. Recent crime prevention initiatives are examined, with emphasis on the following issues: historical development of the initiatives, their grounding in theories of crime and human behavior, their effectiveness, their unintended consequences, and the values they serve. Special approval needed from the instructor.

CCJ550 - Sem Juvnl Justice & Delinquency 550-3 Seminar in Juvenile Justice and Delinquency. An exploration of contemporary problems and policy issues in juvenile justice and juvenile delinquency. Special approval needed from the instructor.

CCJ562 - Law and Social Control 562-3 Law and Social Control. An in-depth examination of the major social science perspectives on law and extra-legal social control. Topics covered may include: theory, social change, law making, informal social control and international law.

CCJ571 - Seminar Punish & Correct 571-3 Seminar in Punishment and Corrections. Examines the theory and philosophy of punishment and the practice of corrections in the United States. Attention is given to the implications of competing penal philosophies, their viability and application in the correctional system. Special approval needed from the instructor.

CCJ576 - Policy Analysis in CCJ 576-3 Policy Analysis in Criminology and Criminal Justice. Examination of the public policy process in criminology and criminal justice, and the role of policy analysis in the development, planning, and implementation of new and revised policies and programs.

CCJ584 - Admin & Mgmt in CJ 584-3 Administration and Management in Criminal Justice. Focuses on the development and history of administrative theory and its impact on management techniques involving administration of justice bureaucracies.

CCJ587 - Seminar in Policing 587-3 Seminar in Policing. Multidisciplinary study of the philosophical premises, theoretical implications and functions of contemporary policing. Special approval needed from the instructor.

CCJ592 - Advanced Seminar in CCJ 592-3 to 6 (3,3) Advanced Seminar in Criminology and Criminal Justice. Seminars of varied content for advanced students. May be repeated with different topics up to a maximum of six credits. Special approval needed from the instructor.

CCJ595 - Supervised Field Experience 595-1 to 6 Supervised Field Experience. Experience in law enforcement agencies, juvenile courts, probation and parole departments, correctional institutions, delinquency control programs and public or voluntary agencies. Orientation sessions precede placement. Student must submit internship application during the first thirty days of the preceding spring or fall semester. Graded S/U only. Only three credit hours may count toward post-baccalaureate studies in CCJ. Special approval needed from the instructor.

CCJ599 - Thesis 599-1 to 6 Thesis. Graded S/U only. Special approval needed from the academic coordinator.

CCJ600 - Doctoral Dissertation 600-1 to 24 (1 to 12 per semester) Doctoral Dissertation. Hours and credit to be arranged by director of graduate studies. Graded S/U only. Maximum of 24 hours used toward degree.

CCJ601 - Continuing Enrollment 601-1 (per semester) Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Criminology and Criminal Justice Faculty

Bubolz, Bryan, Assistant Professor, Ph.D., University of Nebraska at Omaha, 2014.

Garofalo, James, Professor, Emeritus, Ph.D., State University of New York at Albany, 1978.

Giblin, Matthew J., Associate Professor, Ph.D., Indiana University, 2004.

Harbin, Michael, Lecturer, M.A., Southern Illinois University Carbondale, 1990.

Hibdon, Julie, Assistant Professor, Ph.D., George Mason University, 2011.

Hillyard, Daniel, Associate Professor, J.D., Ph.D., University of California, Irvine, 2001.

Kochel, Tammy Rinehart, Associate Professor, Ph.D., George Mason University, 2009.

Kroner, Daryl G., Professor, Ph.D., Carleton University, 1999.

LeBeau, James L., Professor, Emeritus, Ph.D., Michigan State University, 1978.

McDermott, M. Joan, Associate Professor, Emerita, Ph.D., State University of New York at Albany, 1979.

Mullins, Christopher, Professor, Ph.D., University of Missouri-St. Louis, 2004.

Narag, Raymund, Assistant Professor, M.A., Michigan State University, 2013.

Nowacki, Jeffrey, Assistant Professor, Ph.D., University of New Mexico, 2014.

Pleggenkuhle, Breanne, Assistant Professor, Ph.D., University of Missouri-St. Louis, 2012.

Schafer, Joseph A., Professor and Chair, Ph.D., Michigan State University, 2000.

Computer Science

Computers are a very prominent part of modern business and society. Many of the most important and exciting technological developments today involve computers and computer systems. The expanding role of computer-based systems has caused a high demand for computer professionals, a situation that is expected to continue well into the future.

Computer science is an extremely exciting, challenging and rewarding area of study. It incorporates an excellent combination of theoretical and intellectual content on the one hand, and practical application

and societal importance on the other. By some standards, it is the strongest discipline in academia today, and has been for the past three decades.

Computer science is a broad and multidisciplinary field. Its general focus is on the design, analysis and use of computer hardware and software. As an academic discipline, it does not focus on just one technology, programming language, or computer architecture. Rather, it seeks to ground the student in fundamental concepts that are applicable to many environments.

Our curriculum prepares graduates for positions in the computer industry, as well as for advanced studies and research. We offer an undergraduate major leading to the Bachelor of Science and Bachelor of Arts degrees, an undergraduate minor, and graduate programs leading to the Master of Science degree and Doctor of Philosophy degree in computer science.

The bachelor's degree programs in computer science provide students with the technical background necessary to use, design, analyze and implement computer software and systems. All students must complete the required University Core Curriculum and satisfy the College of Science requirements. Computer science majors are required to take a core set of courses dealing with programming, data structures and algorithms, computer organization, operating systems, social issues of computing, and a senior project.

Along with taking the core courses, computer science majors may choose from a broad selection of computer-based courses in order to complete their departmental requirements. This broad selection of courses covers all principal areas of computer science: languages, networks, databases, architecture, graphics, software engineering, artificial intelligence, bioinformatics, web development, computer security, robotics and parallel computing. The curriculum for the Bachelor of Science degree is more traditional and somewhat more flexible than that for the Bachelor of Arts degree. It prepares students for a wide range of technical careers as software developers, systems administrators, database administrators, network administrators, etc. It also prepares students for entry into graduate degree programs in computer science. The Bachelor of Arts degree program is more specifically oriented toward the interdisciplinary aspect of computer science in which students select a secondary concentration such as: business, engineering, science, education, liberal arts, or mass communication. One possible secondary concentration in the area of business applications is designed to enable students to pursue a fifth year of studies leading to an MBA degree.

Our department also offers a minor in computer science. Students can choose from a variety of specializations. Service courses are also available for students who wish to acquire some computer literacy but are not pursuing a career as a computer professional. Computer science majors can enrich their computer science degree with a secondary concentration, minor, or double major in areas such as mathematics, engineering, business, communications, etc.

Students interested in computer science will be advised with respect to computer science courses by the department so they may profitably pursue their academic and professional interests.

The department enforces the following retention policy: a computer science major will not be permitted to enter any of the courses CS 220, CS 306, CS 311, CS 320, CS 330 and CS 335, unless that student has achieved a grade point average of at least 2.00 for all required precedent computer science courses. Any exceptions to this policy will require the written approval of the department.

Permission to enroll in departmental courses is subject to the restriction that a student who receives a grade of F or WF two times in the same course cannot take the course again. An exception to this policy may be granted by written approval of the department, but such exceptions will be rare.

The department also enforces the following restriction on students repeating its courses: a student cannot repeat a course or its equivalent, in which a grade of B or better was earned, without the consent of the department.

Bachelor of Science Degree in Computer Science, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39

Degree Requirements	Credit Hours
College of Science Academic Requirements	9
Biological Sciences (3 hours completed in UCC)	3
Mathematics (completed with computer science major) Physical Sciences (completed with computer science major)	
Supportive Skills - CS 290 and CS 280 or CS 480	6
Requirements for Major in Computer Science ²	70
Computer Science Core ³	31
CS 202, CS 215, CS 220, CS 221, CS 306, CS 311, CS 320, CS 330, CS 335, each with a grade of C or better	
Computer Science Electives ⁴	21
To build on the Core and to provide breadth and depth, seven 400-level computer science courses must be chosen	5
Senior Project 498 and 499/499B	5
MATH 150, MATH 250, MATH 221 ⁵	8
Laboratory Science Sequence - PHYS 205A, PHYS 205B and PHYS 255A, PHYS 255B	5
General Electives	2
Total	120

1 The supportive skills are also required for a major.

2 The supportive skills are also required for a major. At least half of the computer science credit hours must be taken at SIU.

3 At least half of the computer science credit hours must be taken at SIU.

4 At least half of the computer science credit hours must be taken at SIU. CS 300 and CS 393 cannot be used to fulfill the elective requirement. Use of CS 391 requires department approval. Use of CS 490, CS 491, CS 492, or CS 493 requires departmental approval. At most one of CS 447, CS 449, CS 471, CS 472, CS 475, and CS 476 can be used as an elective. Up to two of the seven 400-level courses could be replaced by 300-level computer science courses.

5 The supportive skills are also required for a major. Prerequisite is MATH 111 or MATH 108 and MATH 109. The elective hours are reduced by 3-6 hours for students who place into a course lower than calculus.

Bachelor of Arts Degree in Computer Science, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Science Academic Requirements	12
Biological Sciences (3 hours completed in UCC)	3
Mathematics - completed with computer science major Physical Sciences (3 hours in UCC)	3
Supportive Skills - CS 280 or CS 480 and CS 290	6
Requirements for Major in Computer Science ¹	68
Computer Science Core ²	31
CS 201, CS 202, CS 215, CS 220, CS 221, CS 304 or CS 305, CS 306, CS 330, CS 335 each with a grade of C or better	
Computer Science Electives ³	18
To build on the Core and to provide breadth and depth, two additional 300- and four 400-level computer science courses must be chosen.	
MATH 111 (3 hours completed in UCC) ⁴	1
Secondary Concentration ⁵	18
18 credit hours approved by the Department of Computer Science in one of the following areas: business, engineering, science, education, liberal arts, or mass communication. Pre-med, pre-law or a minor in any of the above areas may fully or partially satisfy this requirement depending on credit hours.	
General Electives	1
Total	120

¹ The supportive skills are also required for a major.

² At least half of the computer science credit hours must be taken at SIU. Students must take either CS 304 or CS 305.

³ At least half of the computer science credit hours must be taken at SIU. CS 300 and CS 393 cannot be used to fulfill the elective requirement. Use of CS 391 requires department approval. Use of CS 490, CS 491, CS 492, or CS 493 requires departmental approval. At most one of CS 447, CS 449, CS 471, CS 472, CS 475, and CS 476 can be used as an elective.

4 MATH 111 could be replaced by MATH 108 and MATH 109, or by MATH 150.

5 MBA Foundation: MATH 150 (instead of MATH 111), ACCT 220, FIN 270 and FIN 330, MGMT 304 or MGMT 318, MKTG 304, and ECON 240 and ECON 241. MGMT 304 allows a student to earn a minor in Business Administration. MGMT 318 is required for entry into the Master in Business Administration degree program. Six credit hours must be at 300-level or above.

For your individualized curricular guide, see your Student Education Planner in DegreeWorks.

Concentrations for BS and BA programs:

Computer science majors can use their electives to form an optional concentration in four different computer science areas: computer networks and security; database and systems; software engineering and application development; or artificial intelligence and robotics. Computer science majors must take three courses (out of their 400-level electives) from a particular topic to receive a concentration in that area. Concentrations will not appear on the diploma but will be stated on a certificate issued by the department. Computer science is a very dynamic field; therefore see cs.siu.edu for current concentration areas and their relevant courses.

Computer Science Minor

A minor consists of CS 202, CS 215, CS 220 and at least nine hours of 300-level computer science coursework. At least nine of these hours must be taken at SIU.

Computer Science Courses

CS105 - Intro to Application Software 105-3 Introduction to Application Software. This course is designed to provide a detailed exposure to various computer applications software including word processing, database management, spreadsheet, presentation, Web design software, and programming concepts. The course is designed to help students to better use the computer as a tool in their own fields and to help prepare students for Microsoft Office Specialist Certification examinations.

CS200B - Computer Concepts 200B-3 Computer Concepts. [IAI Course: BUS 902] The course is designed to provide participants with a broad overview of computer concepts including key terminology and components of computer hardware, software, and operating systems. Topics will include, but are not limited to computer architecture, peripheral devices, networking components, system software, information system analysis, application software including word processing, database management, spreadsheet, and presentation software. Discussion will also include the Internet and Web page development.

CS201 - Problem Solving with Computers 201-3 Problem Solving with Computers. This course provides an introduction to problem solving using computers. It goes beyond basic computer literacy and application software experiences, but is less intensive than a first course devoted solely to programming. The course focuses on problem solving in the context of an introduction to computer programming and includes coverage of topics from computer literacy, word processing, spreadsheet and database packages. A preliminary treatment of the Internet and World Wide Web is also included. Students cannot get credit for both CS 201 and CS 201B. Course fee: \$60.

CS201B - Beauty and Joy of Computing 201B-3 The Beauty and Joy of Computing. This course serves as an introductory course to the beauty and joy of computing for non-CS majors as well as first year CS majors. The history, social implications, principles, and applications of computing in addition to programming basics will be discussed. The joy of programming a computer will be delivered to the students using a friendly, visual programming language that does not require keyboard instead a simple drag-and-drop window interface. There will be many fun programming assignments and one team project related to student's interests. Students cannot get credit for both CS 201 and CS 201B.

CS202 - Intro to Computer Science 202-4 Introduction to Computer Science. [IAI Course: CS 911] An introduction to computers and programming using a high-level structured language including a discussion of programming constructs and data representation. Primary emphasis will be given to problem solving, algorithm design, and program development. Three one-hour lectures and one two-hour lab per week. Prerequisite: Mathematics 111 or equivalent with a grade of C or better. Course fee: \$60.

CS215 - Discrete Mathematics 215-4 Discrete Mathematics. (University Core Curriculum) [IAI Course: M1 905] Introduction to topics relevant to the study of computer science including: number systems, sets, sequences, summations, logic and truth tables, proofs, functions, relations, matrix operations, combinations, permutations, counting techniques, discrete probability, algorithmic complexity, recurrence relations, Boolean algebra, simple combinational circuits, simplification techniques. Prerequisites: MATH 111 or equivalent with grade of C or better. Course fee: \$60.

CS220 - Programming w/Data Structures 220-4 Programming with Data Structures. [IAI Course: CS 912] Advanced programming, data structures and algorithm design. Topics included advanced language features, data abstraction and object-oriented programming, recursion, stacks, queues, linked lists, trees and graphs, sorting and searching. The course meets for three lecture hours and two laboratory hours per week. Prerequisites: CS 202 and CS 215 each with a grade of C or better. Course fee: \$60.

CS221 - Internet & Mobile Computing 221-4 Introduction to Internet and Mobile Computing. Introduction to components, architecture and infrastructure of systems and services to support internet computing and mobile platforms. Linux/Unix systems and server-side infrastructure: tools, commands and scripting. Client-side interfaces and application development (Android and web), IDEs, debugging, utilizing resources and services. This course will have a strong hands-on component. Prerequisite: CS 202 with a grade of C or better. CS fee: \$100.

CS280 - Computational Statistics I 280-3 Computational Statistics I. This course provides a basic introduction to probability and statistics as well as related computational approaches. Topics include basic probability models, combinatorics, random variables, discrete and continuous probability distributions, statistical estimation and hypotheses testing, confidence intervals and linear regression. Some selected computational approaches for statistical problems such as simulation of random variables from probability distributions, the visualization of multivariate data, Monte Carlo integration and methods in inference will also be discussed. The R language will be used for programming assignments. Prerequisite: MATH 108 with a grade of C or better.

CS290 - Comm Skills & Ethics for CS 290-3 Communication Skills and Ethics for Computer Science. Effective writing, reading, presentation and oral communication skills for computer science professionals. Evaluation and analysis of technical material. Communicating with stakeholders and team members. Professional ethics and responsibilities in society and industry. Legal and sustainability impact. Discussions and assignments utilizing technical materials and case studies pertaining to history, research, practice and ethics in the discipline. Prerequisites: CS 201 or CS 202 with a grade of C or better or consent of the instructor.

CS300 - Introduction to Linux 300-3 Introduction to Linux. A gentle introduction to the Linux operating system. Computer programming experience is not required. Students will gain the knowledge and hands-on experience needed to install, configure, and use Linux. Emphasis will be placed on administration skills and security. Software for Linux will be surveyed, particularly to identify replacements for standard Windows applications. Prior experience with Windows or Macintosh operating systems is assumed.

CS304 - Advnc Object-Oriented Progrmng 304-3 Advanced Object-Oriented Programming. Advanced features of object-oriented programming are covered in depth. The topics covered include, but are not limited to, the following: polymorphism, inheritance, overloading, generic programming, exception handling, file I/O, GUI development. A group project is an integral part of the course. Prerequisite: CS 220 with a grade of C or better.

CS305 - Software Development 305-3 Software Development Practices. Practices, tools and methodologies for development of software within the context of a team. Agile software practices and modern development tools are used to build an enhanced understanding of object-oriented design principles, implementation, and testing to meet customer requirements. A team project is an integral part of this course. Prerequisite: CS 220 with C or better.

CS306 - Linux/UNIX Programming 306-3 Linux/UNIX Programming. This course will prepare students to develop software in and for Linux/UNIX environments. Topics to be covered include basic operating system concepts, effective command line usage, shell programming, the C language, programming development tools, system programming, network programming (client-server model and sockets), and GUI programming. Prerequisites: CS 220 and CS 221 with a grade of C or better. CS fee: \$60.

CS311 - Theory Programming Languages 311-3 The Theory and Implementation of Programming Languages. Introduction to the theory and implementation of programming languages including finite automata, regular grammars, lexical analysis, parsing, syntax-directed translation, semantic analysis, binding variables, data types, static and dynamic scope, subprograms, abstraction, and concurrency. Study of object-oriented, functional, and logic programming languages. Lab work is essential. Prerequisite: CS 220 with a grade of C or better.

CS315 - Computer Logic & Digital Design 315-3 Computer Logic and Digital Design. Introduction to switching algebra and its applications. Combinational logic and combinational circuit components. Sequential logic and sequential circuit components. Asynchronous sequential circuits. Prerequisite: CS 215 with a grade of C or better.

CS320 - Computer Organiztn & Architect 320-3 Computer Organization and Architecture. Overview of the basic logic circuits needed in constructing a computer. Fundamental computer operations: machine and assembly language instructions, stacks, procedures and macros. The translation process: assembly, linking and loading. Hardware elements for processing, transferring, and storing information. Data path and control unit for a simple processor. Prerequisite: CS 220 with grade of C or better.

CS330 - Intro Des & Analysis of Alg 330-3 Introduction to the Design and Analysis of Algorithms. A detailed treatment of the design, analysis, and complexity of algorithms, including greedy algorithms, divide and conquer, dynamic programming, and limitations of algorithms as problems get larger or more complex. Prerequisites: CS 220 with a grade of C or better.

CS335 - Operating Systems 335-3 Operating Systems. An extended treatment of the components of operating systems including process management, concurrency, memory management, device management, file management, and security. Prerequisites: CS 220 and CS 221 with a grade of C or better.

CS350 - Web Application Development 350-3 Web Application Development. A comprehensive introduction to languages and tools used to create client side and server side Web applications. Topics include, but are not limited to, markup languages, server-side and client-side scripting languages, web programming languages, web development architectures, frameworks and technologies, and database access. Prerequisites: CS 202 and CS 221 with a grade of C or better or consent of instructor.

CS391 - Current Topics in CS 391-1 to 3 Current Topics in Computer Science. Selected current topics from various fields of computer science. Only maximum of 6 credit hours can be counted toward degree. Special approval needed from the instructor.

CS393 - Internship in Comp Science 393-1 to 6 Internship in Computer Science. Credit for participation in a formalized internship program involving computer science related work. Hours do not count toward requirements for computer science major. Mandatory Pass/Fail. Prerequisite: prior approval of the sponsoring agency and the Department of Computer Science. Restricted to Computer Science major.

CS401 - Computer Architecture 401-3 Computer Architecture. Review of logical circuit design. Hardware description languages. Algorithms for high-speed addition, multiplication and division. Pipelined arithmetic. Implementation and control issues using PLA's and microprogramming control. Cache and main memory design. Input/Output. Introduction to interconnection networks and multiprocessor organization. Prerequisite: CS 320 with a grade of C or better or graduate standing.

CS404 - Autonomous Mobile Robots 404-3 Autonomous Mobile Robots. This course is a comprehensive introduction to modern robotics with an emphasis on autonomous mobile robotics. Fundamentals of sensors and actuators as well as algorithms for top level control are discussed. Multi-robotics and human-robot interaction issues are explored. A group project is an integral part of this course. Prerequisite: CS 330 with a grade of C or better or graduate standing. CS fee: \$125.

CS406 - Basic Linux System Admin 406-3 Basic Linux System Administration. This course will be an introduction to the administration of Linux systems, with emphasis on security for networked systems. Topics to be covered include: installation and configuration of Linux distributions, typical maintenance activities, and security measures for networked systems. Students will have access to lab machines for hands on practice. Prerequisite: CS 306 with a grade of C or better or graduate standing.

CS407 - Adv Linux/UNIX Programming 407-3 Advanced Linux/UNIX Programming. This course builds on the knowledge gained in CS 306, to prepare students to do advanced development on Linux/UNIX platforms. The topics studied are critical for achieving high performance in large-scale, high-load networked software systems. These topics include development techniques such as profiling, concurrent programming and synchronization, network programming for high-load servers, advanced I/O alternatives, and IPC such as shared memory. The course will involve the study of code from Open Source projects like Apache and Nginx. The focus will be on the C language, but other languages will also be considered. Students must complete a significant network software project. Prerequisites: CS 306 and CS 335, with grades of C or better, or graduate standing with C language and Linux system programming experience.

CS408 - Applied Cryptography 408-3 Applied Cryptography. This course is a comprehensive introduction to modern cryptography, with an emphasis on the application and implementation of various techniques for achieving message confidentiality, integrity, authentication and non-repudiation. Applications to Internet security and electronic commerce will be discussed. All background mathematics will be covered in the course. Prerequisite: CS 330 with a grade of C or better and MATH 221 or graduate standing.

CS410 - Computer Security 410-3 Computer Security. A broad overview of the principles, mechanisms, and implementations of computer security. Topics include cryptography, access control, software security and malicious code, trusted systems, network security and electronic commerce, audit and monitoring, risk management and disaster recovery, military security and information warfare, physical security, privacy and copyrights, and legal issues. Prerequisite: CS 306 with a grade of C or better or graduate standing.

CS412 - Programming Distributed Apps 412-3 Programming Distributed Applications. This course uses advanced features of the Java programming language to develop networked, distributed, and web-based applications. Topics covered include, but are not limited to, sockets, datagrams, the Java security model, threads, multi-tier architectures, Java RMI, Java database connectivity, and Java-based mobile agents. Prerequisite: CS 306 with a grade of C or better or graduate standing.

CS416 - Compiler Construction 416-3 Compiler Construction. Introduction to compiler construction. Design of a simple complete compiler, including lexical analysis, syntactical analysis, type checking, and code generation. Prerequisite: CS 306 and 311 each with a grade of C or better or graduate standing.

CS420 - Distributed Systems 420-3 Distributed Systems. A top-down approach addressing the issues to be resolved in the design of distributed systems. Concepts and existing approaches are described using a variety of methods including case studies, abstract models, algorithms and implementation exercises. Prerequisite: CS 335 or graduate standing.

CS425 - Prin Virtual & Cloud Computing 425-3 Principles of Virtualization and Cloud Computing. Cloud Computing (CC) represents a recent major strategic shift in computing and Information Technology. This course explores fundamental principles, foundational technologies, architecture, design, and business values of CC. Understanding will be reinforced through multiple angles including: analysis of real world case studies, hands-on projects and in-depth study of research developments. Prerequisites: CS 330 with a grade of C or better or graduate standing.

CS430 - Database Systems 430-3 Database Systems. The course concentrates on the relational model, database design, and database programming. Topics include relational model, relational algebra, SQL, constraints and integrity, transaction support, concurrency control, database design, normalization, backup, recovery, and security. A comprehensive product-like project is an integral part of the course. Prerequisite: CS 330 with a grade of C or better or graduate standing.

CS434 - Learning From Data 434-3 Learning From Data. An introduction to classical machine learning theory and practical techniques. Topics to be covered include computational learning theory (VC theory),

linear classification and regression models, SVMs and kernel methods, decision trees, the bias-variance tradeoff, overfitting, and regularization. Prerequisites: CS 330 with a grade of C or better or graduate standing.

CS435 - Software Engineering 435-3 Software Engineering. Principles, practices and methodology for development of large software systems. Object-oriented principles, design notations, design patterns and coping with changing requirements in the software process. Experiences with modern development tools and methodologies. A team project is an integral part of this course. Prerequisite: CS 330 with a grade of C or better or graduate standing; CS 306 with a grade of C or better recommended.

CS436 - Artificial Intelligence I 436-3 Artificial Intelligence I. Search and heuristics, problem reduction. Predicate calculus, automated theorem proving. Knowledge representation. Applications of artificial intelligence. Parallel processing in artificial intelligence. Prerequisite: CS 311 and 330 each with a grade of C or better or graduate standing.

CS437 - Machine Learn & Soft Computing 437-3 Machine Learning and Soft Computing. An introduction to the field of machine learning and soft computing. It covers rule-based expert systems, fuzzy expert systems, artificial neural networks, evolutionary computation, and hybrid systems. Students will develop rule-based expert systems, design a fuzzy system, explore artificial neural networks, and implement genetic algorithms. Prerequisite: CS 330 with a grade of C or better or graduate standing.

CS438 - Bioinformatics Algorithms 438-3 Bioinformatics Algorithms. This course is an introductory course on bioinformatics algorithms and the computational ideas that have driven them. The course includes discussions of different techniques that can be used to solve a large number of practical problems in biology. Prerequisite: CS 330 with a grade of C or better or graduate standing.

CS440 - Computer Networks 440-3 Computer Networks. Design and analysis of computer communication networks. Topics to be covered include queuing systems, data transmission, data link protocols, topological design, routing, flow control, security and privacy, and network performance evaluation. Prerequisite: CS 330 with a grade of C or better or graduate standing; CS 306 recommended.

CS441 - Mobile & Wireless Computing 441-3 Mobile and Wireless Computing. Concepts of mobile and wireless systems are presented. These concepts include, but are not limited to, Routing and Medium Access for Mobile Ad hoc and Wireless Sensor Networks, Mobile IP, Wireless LAN and IEEE 802.11. Hands-on group lab experience is an integral component in the course. Prerequisite: CS 330 with a grade of C or better, or graduate standing or consent of the instructor.

CS447 - Introduction to Graph Theory 447-3 Introduction to Graph Theory. (Same as MATH 447) Graph theory is an area of mathematics which is fundamental to future problems such as computer security, parallel processing, the structure of the World Wide Web, traffic flow and scheduling problems. It also plays an increasingly important role within computer science. Topics include: trees, coverings, planarity, colorability, digraphs, depth-first and breadth-first searches. Prerequisite: MATH 349 with C or better.

CS449 - Intro to Combinatorics 449-3 Introduction to Combinatorics. (Same as MATH 449) This course will introduce the student to various basic topics in combinatorics that are widely used throughout applicable mathematics. Possible topics include: elementary counting techniques, pigeonhole principle, multinomial principle, inclusion and exclusion, recurrence relations, generating functions, partitions, designs, graphs, finite geometry, codes and cryptography. Prerequisite: MATH 349 with C or better.

CS451 - Theory of Computing 451-3 Theory of Computing. The fundamental concepts of the theory of computation including finite state acceptors, formal grammars, Turing machines, and recursive functions. The relationship between grammars and machines with emphasis on regular expressions and context-free languages. Prerequisite: CS 311 and 330 each with a grade of C or better or graduate standing.

CS455 - Adv Alg Design & Analysis 455-3 Advanced Algorithm Design and Analysis. An in-depth treatment of the design, analysis and complexity of algorithms with an emphasis on problem analysis and design techniques. Prerequisites: CS 330 with a grade of C or better or graduate standing.

CS471 - Optimization Techniques 471-3 Optimization Techniques. (Same as MATH 471) Introduction to algorithms for finding extreme values of nonlinear multivariable functions with or without constraints.

Topics include: convex sets and functions; the arithmetic-geometric mean inequality; Taylor's theorem for multivariable functions; positive definite, negative definite, and indefinite matrices; iterative methods for unconstrained optimization. Prerequisite: MATH 221 and MATH 250 with C or better.

CS472 - Linear Programming 472-3 Linear Programming. (Same as MATH 472) Introduction to finding extreme values of linear functionals subject to linear constraints. Topics include: recognition, formulation, and solution of real problems via the simplex algorithm; development of the simplex algorithm; artificial variables; the dual problem and duality theorem; complementary slackness; sensitivity analysis; and selected applications of linear programming. Prerequisite: MATH 221 with C or better.

CS475 - Numerical Analysis I 475-3 Numerical Analysis I. (Same as MATH 475) Introduction to theory & techniques for computation with digital computers. Topics include: solution of nonlinear equations; interpolation & approximation; solution of systems of linear equations; numerical integration. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course. Prerequisites: MATH 221 and MATH 250 with C or better.

CS476 - Numerical Analysis II 476-3 Numerical Analysis II. (Same as MATH 476) Continuation of CS 475. Topics include: solution of ordinary differential equations; computation of eigenvalues and eigenvectors; and solution of partial differential equations. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course. Prerequisites: MATH 305 and MATH 475 with C or better.

CS480 - Computational Statistics II 480-3 Computational Statistics II. This course utilizes computational and graphical approaches to solve statistical problems. A comprehensive coverage on modern and classical methods of statistical computing will be given. Case studies in various disciplines such as science, engineering and education will be discussed. Various topics such as numerical integration and simulation, optimization and maximum likelihood estimation, density estimation and smoothing as well as re-sampling will be presented. Students will be able to create graphical and numerical display based on their data analysis results using R programming language. Prerequisite: MATH 250 and CS 306 or CS 330 with a grade of C or better or graduate standing.

CS484 - User Interface Dsgn & Devlpmnt 484-3 User Interface Design and Development. Problems and processes in the design of highly usable systems. Understanding stakeholders, requirements, tasks, prototyping, evaluation, guidelines and design process and heuristics. Interactive software concepts and implementation considerations. A group project is an integral part of this course. Prerequisite: CS 306 with a grade of C or better or graduate standing.

CS485 - Computer Graphics 485-3 Computer Graphics. Principles and techniques of computer graphics. Interactive graphics software development using a modern graphics standard. Topics include: primitives, transforms, clipping, modeling, viewing, rendering, texture, animation and ray tracing. A group project is an integral part of this course. Prerequisite: CS 306 with a grade of C or better or graduate standing; MATH 150 and 221 are recommended.

CS487 - Software Game Development 487-3 Software Aspects of Game Development. This course focuses on software implementation and development aspects of game production including: software process, system architecture, frameworks, entity management and interaction design, game design, production and business issues as well as technical foundations in graphics modeling and rendering, collision detection, physics, artificial intelligence, and multiplayer techniques. Prerequisite: CS 330 with a grade of C or better or graduate standing.

CS490 - Readings 490-1 to 6 (1 to 3 per semester) Readings. Supervised readings in selected subjects. Not for graduate credit. Mandatory Pass/Fail. Special approval needed from the instructor and department.

CS491 - Special Topics 491-1 to 6 (1 to 3 per topic) Special Topics. Selected advanced topics from the various fields of computer science. Special approval needed from the instructor.

CS492 - Special Problems 492-1 to 6 (1 to 3 per semester) Special Problems. Individual projects involving independent work. Special approval needed from the department.

CS493 - Seminar 493-1 to 4 Seminar. Supervised study. Preparation and presentation of reports. Special approval needed from the instructor.

CS498 - Senior Seminar in CS 498-2 Senior Seminar in Computer Science. This course consists of diverse presentations by faculty, students, and invited speakers from industry, and prepares students for CS 499 (Senior Project in Computer Science) or CS 499B (Senior Thesis in Computer Science). Students in CS project track will select and plan a real world team project, while students in CS thesis track will select a research topic, under advisement of a Computer Science faculty, and will present a research proposal. Prerequisite: completion of or concurrent enrollment in at least two other 400-level Computer Science courses. Restricted to senior standing in Computer Science.

CS499 - Senior Project in CS 499-3 Senior Project in Computer Science. A continuation of CS 498, performing exercise in the design, implementation, documentation, and deployment of a group project culminating in a presentation to the Computer Science faculty. Prerequisite: CS 498.

CS499B - Senior Thesis in CS 499B-3 Senior Thesis in Computer Science. A continuation of CS 498, carrying out the approved research under the supervision of a Computer Science faculty culminating in a written thesis and presentation to the Computer Science faculty, evaluated by a committee consisting of the Undergraduate Curriculum Committee, the advisor, and the instructor of the course. Prerequisite: CS 498.

CS501 - Adv Computer Architecture 501-3 Advanced Computer Architecture. Hardware and software elements of multiprocessors, multicomputers, pipeline and array machines, data flow architecture and other state-of-the-art architectures. Design principles related to machine structures, interconnection networks, control software and hardware, data storage and access. Prerequisite: CS 401.

CS503 - Fault Tolerant Compt Systems 503-3 Fault-Tolerant Computing Systems. An introduction to different aspects of fault-tolerance in computing systems. Redundancy techniques with an emphasis on information redundancy, software fault-tolerance, coding techniques, algorithm-based fault-tolerance, fault-tolerant interconnection network architecture, DFT techniques, and quantitative evaluation methods. Prerequisite: CS 401.

CS510 - Wireless and Network Security 510-3 Wireless and Network Security. Advanced security concepts of distributed systems and wireless networks are presented. Topics include IEEE 802.11 security, Wireless Encryption and Authentication, Key Management in Networks, Distributed Denial of Service Attacks, Routing Security, Intrusion Detection and Mobile Code Security. Prerequisite: CS 410 with a grade of C or better or consent of the instructor.

CS511 - Forml Spec Progrmmng Lang 511-3 Formal Specification of Programming Languages. A survey of modeling techniques and Meta languages for the formal specification of the syntax and semantics of high-level programming languages. Prerequisite: CS 311.

CS512 - Declarative Programming 512-3 Declarative Programming. An advanced level course on nonprocedural programming with emphasis on logic programming, pure functional programming, and the characteristics of the declarative style common to these two paradigms. Topics include logic programming, functional programming, implementation consideration for each along with current research topics in the areas. Prerequisite: CS 311.

CS514 - Advanced Operating Systems 514-3 Advanced Operating Systems. Rigorous treatment of advanced topics in operating systems. Multiprocessors and distributed operating systems. Highly concurrent machines. Performance analysis of memory management and scheduling algorithms. Recovery techniques in distributed computation. Security in operating systems. Prerequisite: CS 335 with a grade of C or better.

CS516 - Advanced Compilers 516-3 Advanced Compilers. A continuation of 416 including advanced topics in lexical and syntax analysis, error recovery, semantic analysis, code optimization and compiler compilers. Prerequisite: CS 416.

CS520 - Adv Topic Parallel DISTRB Comp 520-3 Advanced Topics in Parallel & Distributed Computing. An advanced treatment of parallel and distributed computing; review of hardware and software considerations for parallel computation; development and analysis of parallel algorithms (with particular

attention to the communication and synchronization costs associated with parallel algorithms); effect of granularity on performance; a comparison of the parallel and distributed programming paradigms including a detailed study of the central features of each approach; software systems for distributed computing including exposure to one or more distributed programming environments; the direction of parallel computing as suggested by recent, high level parallel languages; parallelizing serial programs; parallelizing compilers; future directions of parallel and distributed computing systems. The course will include a student project. Prerequisite: CS 420.

CS530 - Advanced Database Systems 530-3 Advanced Database Systems. A detailed treatment of advanced topics in data base systems including, but not limited or restricted to, relational database theory, query optimization, recovery techniques, concurrency control, distributed database systems, security and integrity and database machines. Prerequisite: CS 430.

CS532 - Topics in Information Systems 532-3 to 6 Topics in Information Systems. A detailed study of two or three topics relevant to information systems. Topics may include but are not limited to sorting, searching, information retrieval and automatic text processing, database security and encryption, distributed databases and data communication. Prerequisite: CS 430. Special approval needed from the instructor.

CS533 - Data Mining/Big Data Analysis 533-3 Data Mining and Big Data Analysis. This course provides a series of comprehensive and in-depth lectures on the core techniques in data mining and knowledge discovery; addresses the unique issues of big data; and discusses potential applications of data mining particularly on big data analysis. Major topics include: data preparation, association mining, classification (and prediction), clustering, characteristics and challenges of big data, and strategies of big data mining and analysis. Prerequisites: CS 330 and CS 430 with grades of C or better or consent of instructor.

CS534 - Big Data Management/Analytics 534-3 Big Data Management and Analytics. This course provides comprehensive and in-depth discussions of big data management and analytics. Main subjects include computation and programming models, management and analytics algorithms, and platforms/frameworks especially designed for big data. The objective of this course is to equip students with the ability to understand, use, and build big data management and analytics systems or tools. Prerequisites: CS 430 with a grade of C or better or graduate standing.

CS536 - Artificial Intelligence II 536-3 Artificial Intelligence II. Theorem proving, the Resolution Principle, strategies, and achievements. Program verification. Natural language processing. Other selected topics. Prerequisite: CS 436.

CS537 - Adv Topics in Expert Systems 537-3 Advanced Topics in Expert Systems. This course is designed to provide students with advanced topics in expert systems theory. Topics covered include: knowledge representation, methods of inference, reasoning under uncertainty, and inexact reasoning (fuzzy logic). A practical introduction to expert systems programming serves to reinforce and clarify the theoretical concepts. Prerequisite: CS 330 or consent of instructor.

CS538 - Game Theory in Networks 538-3 Game Theory in Networks. Game theoretic concepts apply whenever actions of several players are interdependent. This course will provide an introduction to classic game theory and strategic thinking including dominance, Nash equilibrium, and stability. Social choice, social learning, and online mechanism design are then discussed. We will examine how game theoretic concepts can be used in developing reasoning strategies, i.e., algorithms. Application of game theoretic framework to telecommunication and human networks is an integral part of this course. Restricted to graduate standing or consent of instructor.

CS539 - Agents & Multiagent Systems 539-3 Agents and Multiagent Systems. This is an advanced treatment of fundamental concepts in the design of intelligent autonomous agents and agent systems. Classic agent theories, architectures, algorithms, and languages are discussed. An agent-based project is an integral part of this course. Restricted to graduate standing or consent of instructor.

CS540 - Adv Comp Networks 540-3 Advanced Computer Networks. Topics include routing protocols used in internet; data compression techniques; telecommunication systems - its services, architecture and protocols; high speed networks; routing protocols in mobile ad-hoc networks; and a detailed performance

analysis of different window flow control and congestion control mechanisms using queuing theory. Prerequisite: CS 440 with a grade of C or better, or consent of the instructor.

CS553 - Formal Languages & Automata 553-3 Formal Languages and Automata. The Chomsky hierarchy of formal grammars and the corresponding classes of automata. Turing machines and basic concepts of computability. Recursive and recursively enumerable languages. Closure properties. Undecidable problems about Turing machines and context-free languages. Deterministic context-free languages and the construction of LR parsers. Prerequisite: CS 451.

CS555 - Computability & Complexity 555-3 Computability and Complexity. Turing machines and other models of computation. Computable functions. Church's thesis. Solvable and unsolvable problems. Introduction to complexity theory including the classes P and NP. Polynomial time approximation algorithms for NP-complete problems. Prerequisite: CS 451.

CS572 - Adv Topics in Num Analysis 572-1 to 12 Advanced Topics in Numerical Analysis. (Same as MATH 572) Selected advanced topics in Numerical Analysis chosen from such areas as: approximation theory; spline theory; special functions; wavelets; numerical solution of initial value problems; numerical solution of boundary value problems; numerical linear algebra; numerical methods of optimization; and functional analytic methods. Special approval needed from the instructor.

CS585 - Adv Top in Computer Graphics 585-3 Advanced Topics in Computer Graphics. Study of computer graphics for realistic image synthesis. Object modeling and associated data structures. Advanced rendering techniques such as raytracing and radiosity. Efficiency considerations. Image composition and compression. Current advances and research problems in realistic computer graphics. Prerequisite: CS 485.

CS586 - Pattern Recognition 586-3 Pattern Recognition. An introduction to the area of pattern recognition and data science. This course will cover basic and advanced theories, algorithms, and practical solutions of statistical pattern recognition. It covers bayesian learning, parametric and non-parametric learning, data clustering, component analysis, boosting techniques, sequential data, reinforcement learning, and deep learning with neural networks.

CS590 - Readings 590-1 to 6 Readings. Supervised readings in selected subjects. Graded S/U only. Special approval needed from the instructor and department.

CS591 - Special Topics 591-1 to 9 (1 to 3 per topic) Special Topics. Selected advanced topics from the various fields of computer science. Special approval needed from the instructor.

CS593 - Seminar 593-1 to 4 Seminar. Preparation and presentation of reports. Graded S/U only. Special approval needed from the instructor.

CS598 - Graduate Project 598-3 to 9 Graduate Project. A practical exercise in the design, implementation, documentation and deployment of a project. A project may be completed through internship, work/study, or a supervised project. For Ph.D. students only, an internship could include face-to-face or online teaching.

CS599 - Thesis 599-3 to 9 Thesis. Special approval needed from the instructor and department.

CS600 - Doctoral Dissertation 600-1 to 24 (1 to 9 per semester) Doctoral Dissertation. Dissertation research. Hours and credit to be arranged by the student's academic advisor. Graded S/U only. Restricted to admission to Ph.D. in computer science program.

CS601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or graduate project. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or graduate project hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Computer Science Faculty

Bosu, Amiangshu, Assistant Professor, Ph.D., University of Alabama, 2015.
Carver, Norman F., III, Associate Professor, Ph.D., University of Massachusetts, 1990.
Che, Dunren, Professor, Ph.D., Beijing University of Aeronautics and Astronautics, 1994.
Danhof, Kenneth J., Professor, Emeritus, Ph.D., Purdue University, 1969.
Gupta, Bidyut, Professor, Ph.D., University of Calcutta, 1986.
Hexmoor, Henry, Associate Professor, Ph.D., University at Buffalo, 1996.
Hou, Wen-Chi, Professor, Ph.D., Case Western Reserve University, 1989.
Houshmand, Shiva, Assistant Professor, Ph.D., Florida State University, 2015.
Hoxha, Bardh, Assistant Professor, Ph.D. Arizona State University, 2017.
Mark, Abraham M., Professor, Emeritus, Ph.D., Cornell University, 1947.
McGlinn, Robert, Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1976.
Mogharreban, Namdar, Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1989.
Mousas, Christos, Assistant Professor, Ph.D., University of Sussex, 2014.
Phillips, Nicholas C. K., Associate Professor, Emeritus, Ph.D., University of Natal, 1967.
Rahimi, Shahram, Professor and Chair, Ph.D., University of Southern Mississippi, 2002.
Rekabdar, Banafsheh, Assistant Professor, Ph.D., University of Nevada, 2017.
Saeedloei, Neda, Assistant Professor, Ph.D., University of Texas, 2011.
Sinha, Koushik, Assistant Professor, Ph.D., Jadavpur University, 2007.
Wainer, Michael S., Associate Professor, Emeritus, Ph.D., University of Alabama-Birmingham, 1987.
Wright, William E., Professor, Emeritus, D.Sc., Washington University, 1972.
Zargham, Mehdi R., Professor, Emeritus, Ph.D., Michigan State University, 1983.

Crop, Soil and Environmental Management

The Crop, Soil and Environmental Management major is administered through the Plant, Soil and Agricultural Systems department. The major has two specialized areas of study, with both specializations offering a general and science option. Students choosing the general option may select their upper division and elective credits from a wide choice of courses throughout the College of Agricultural Sciences and the University. If interests are more specialized, students may elect the science option and specialize in a specific discipline.

Crop Production and Management Specialization. This specialization provides the student with the background and preparation for careers in the biotechnology, seed, or plant industries incorporating both the traditional and molecular approaches to germplasm development, the agrichemical industry with expertise in crop management and protection employing a holistic approach to crop production by integrating the disciplines of plant pathology, entomology and weed science. This specialization will prepare students with careers with the Illinois/US EPA, US Forest Service, or the USDA (Agricultural Research, Forest, Animal and Plant Health Inspection Services).

Soil Science. Students selecting this specialization will receive training in soil quality management applying the principles of soil-water behavior, fertilizer use efficiency and soil ecology that influence the sustainability and quality of our soil and water resources. This specialization will prepare students with careers with the Illinois/US EPA and the USDA (National Resources Conservation Service) and the state Soil Water Conservation Service.

Opportunities for individual program development within the various specializations/options may be realized through work experience, internships, special studies, and seminars; however, no more than 30 hours of such unstructured coursework may be counted toward the degree. Students in all specializations/options are urged to make use of them to meet the goals and needs of their respective programs.

Students in all specializations must complete the crop, soil and environmental management core. These courses are CSEM 200, CSEM 240, one hour of CSEM 381, and CSEM 409.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Technology Fee

The College of Agricultural Sciences assesses College of Agricultural Sciences undergraduate majors a technology fee of \$4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semesters.

Bachelor of Science Degree in Crop, Soil and Environmental Management, College of Agricultural Sciences

Crop Production and Management (General)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39+2
To include MATH 108, CHEM 140A, PLB 200, UNIV 101I for additional two hours. ¹	
Requirements for Major in Crop, Soil and Environmental Management Core Requirements	41
CSEM 200, CSEM 240, CSEM 300, CSEM 305, CSEM 381, CSEM 401, CSEM 403A, CSEM 409, CSEM 420, CSEM 447, CSEM 468	33
CSEM 300- or 400-level	8
Other required courses:	
CHEM 140B ²	4
ABE 333, ABE 360, AGRI 323 or AGSE 318	2-3
Agricultural Sciences Electives at 300- or 400-level	5
Agricultural Science Electives ³	10
Other Electives	16-17
Total	120

¹ MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted CHEM 200 and CHEM 201 may be substituted Any UNIV 101 may be substituted

² CHEM 210 and CHEM 211 may be substituted

³ Choose any from ABE, AGRI, AGSE, ANS, CSEM, HORT, HTA, HND, FOR

Bachelor of Science Degree in Crop, Soil and Environmental Management, College of Agricultural Sciences

Crop Production and Management (Science)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39+2
To include MATH 108, CHEM 200, CHEM 201, PLB 200, UNIV 101I for additional two hours. ¹	
Requirements for Major in Crop, Soil and Environmental Management Core Requirements:	33
CSEM 200, CSEM 240, CSEM 300, CSEM 305, CSEM 381, CSEM 401, CSEM 403A, CSEM 409, CSEM 420, CSEM 447, CSEM 468	
Other required courses:	36
CHEM 210, CHEM 211, CHEM 340, CHEM 341, CHEM 350, GEOG 434, MATH 109, MATH 140, PLB 320, PHYS 203A, PHYS 203B, AGSE 472 ²	
Electives	10
Total	120

1 MATH 106, or MATH 125 may be substituted Any UNIV 101 may be substituted

2 MATH 111, MATH 140 or MATH 150 may be substituted

Bachelor of Science Degree in Crop, Soil and Environmental Management, College of Agricultural Sciences

Soil Science (Science)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39+2
To include MATH 108, CHEM 200, CHEM 201, PLB 200, UNIV 101I for additional two hours. ¹	
Requirements for Major in Crop, Soil and Environmental Management Core Requirements:	32
CSEM 200, CSEM 240, CSEM 381, CSEM 409, CSEM 441, CSEM 442, CSEM 443, CSEM 446, CSEM 447, CSEM 448, CSEM 454	

Degree Requirements	Credit Hours
Other required courses:	36
CHEM 210, CHEM 211, CHEM 340, CHEM 341, CHEM 350, GEOG 434, MATH 109, MATH 140, PLB 320, PHYS 203A, PHYS 203B, AGSE 472 ²	
Electives	11
Total	120

1 MATH 106, or MATH 125 may be substituted Any UNIV 101 may be substituted

2 MATH 111, MATH 140 or MATH 150 may be substituted

Bachelor of Science Degree in Crop, Soil and Environmental Management, College of Agricultural Sciences

Soil Science (General)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39+2
To include MATH 108, CHEM 140A, PLB 200, UNIV 101I for additional two hours. ¹	
Requirements for Major in Crop, Soil and Environmental Management Core Requirements:	32
CSEM 200, CSEM 240, CSEM 381, CSEM 409, CSEM 441, CSEM 442, CSEM 443, CSEM 446, CSEM 447, CSEM 448, CSEM 454	
CSEM 300- or 400-level	8
Other required courses:	22
CHEM 140B ²	4
Agricultural Sciences Electives at 300- or 400-level ³	9
Agricultural Science Electives	9
Electives	17
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted

2 CHEM 210 and CHEM 211 may be substituted.

Crop, Soil and Environmental Management Minor

A minor in Crop, Soil and Environmental Management is offered. A total of 15 hours is required and at least 12 hours taken at the university. One course may be selected from CSEM 200, or CSEM 240 and at least eight hours from 300- or 400-level structured courses. The department chair or coordinating counselor must be consulted before selecting this field as a minor.

Crop, Soil and Environmental Management Courses

CSEM200 - Intro to Crop Science 200-3 Introduction to Crop Science. [IAI Course: AG 903] Production of important field crops of the world with greatest emphasis on U.S. and Midwestern field crops; crop production changes and adjustments, crop distribution over U.S., and crop groups and classifications, special agronomic problems, crop enemies, crop ecology, fertilizer and liming practices, tillage, crop improvement through breeding. Field trip (no cost).

CSEM240 - Soil Science 240-4 Soil Science. [IAI Course: AG 904] Basic and applied chemical, physical, and biological concepts in soils. The origin, classification and distribution of soils and their relationship to humans and plant growth. Prerequisite: CHEM 140A or higher. Lab fee: \$15.

CSEM257 - Work Experience 257-1 to 10 Work Experience. Credit for on-campus work experience in the areas of plant and soil science, or credit through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Credit awarded based on 4 hours of work per week during the semester for each hour of credit. Special approval needed from the department. Mandatory Pass/Fail.

CSEM300 - Field Crop Production 300-4 Field Crop Production. Principles of growth and production of field crops and their utilization. Laboratory demonstrating principles including research projects and modern production techniques. Prerequisite: CSEM 200.

CSEM305 - Plant Genetics 305-4 Plant Genetics. Principles of genetics and evolution of plants, elementary plant breeding, and the interaction between plant breeding and industry. Prerequisite: CSEM 200.

CSEM347 - Urban Soils 347-3 Urban Soils. A study of the function, structure, and management of soils in urban environments. The emphasis of this class is on urban horticulture: turf, urban forests, and landscape plants in urban settings. The course will focus on the understanding and implementation of basic soil concepts, with an emphasis on sustainability and management of urban soils to minimize maintenance and maximize its utility. Prerequisite: CSEM 240. Lab fee: \$80.

CSEM359 - Intern Program 359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agribusiness. Restricted to junior standing. Special approval needed from the department. Mandatory Pass/Fail.

CSEM370 - Agroecology:Sustainbl Ag Syst 370-3 Agroecology-Sustainable Agricultural Systems. An introduction to the biotic, natural resource, environmental, social and economic implications and requirements of sustainable agriculture. Prerequisite: CSEM 200.

CSEM381 - CSEM Seminar 381-1 to 2 (1,1) Plant and Soil Science Seminar. Discussion of special topics and/or problems in the various areas of plant and soil science. Prerequisite: CMST 101. Restricted to junior standing.

CSEM390 - Special Studies in CSEM 390-1 to 8 Special Studies in Plant and Soil Science. Assignments involving research and individual problems. Special approval needed from the department.

CSEM391 - Honors in CSEM 391-1 to 4 Honors in Plant and Soil Science. Independent undergraduate research sufficiently important to three hours per week of productive effort for each credit hour. Special approval needed from the department.

CSEM400 - Trends-Soil Sci & Agronomy 400-3 Trends in Soil Science and Agronomy. (Same as PSAS 400) A discussion session format will be employed as a means of acquainting students with recent literature and allowing them to remain current with latest developments in their area of specialty. Special approval needed from the department.

CSEM401 - Agricultural Plant Pathology 401-2 Agricultural Plant Pathology. (Same as PSAS 401) A study of micro- and macro organisms and environmental factors that cause disease in plants of agricultural importance; of the mechanisms by which these factors induce disease in plants; and of the methods for managing diseases and reducing the damage they cause. Prerequisite: CSEM 200.

CSEM403A - Field Crop Diseases 403A-2 Field Crops Diseases. (Same as PSAS 403A) A survey of major diseases of important field crops in the United States. Disease identification, cycles, and management strategies will be addressed. Not for graduate credit. Prerequisite: CSEM 200.

CSEM405 - Plant Breeding 405-3 Plant Breeding. (Same as PSAS 405) Principles of plant breeding emphasized together with their application to the practical breeding of agronomic, horticultural, and forest plants. Prerequisite: CSEM 200. Field trip costs approximately \$10.

CSEM408 - World Crop Production 408-3 World Crop Production. Climatological, ecological, physiological, sociological, and economical factors influencing world crop production practices. This course intends to provide students the opportunity to observe world crop production systems on a first-hand basis. Crop specific production, harvesting, processing, and marketing methods will be discussed. Special approval needed from the department.

CSEM409 - Crop Physiology 409-3 Crop Physiology. (Same as HORT 409, PSAS 409) Principles of basic plant physiology. Topics include cell structure, photosynthesis, respiration, water and mineral relations, vascular transport and plant growth regulators. Prerequisites: PLB 200, CHEM 140B. Fee: \$50.

CSEM419 - Plant Molecular Biology 419-3 Plant Molecular Biology. (Same as PSAS 419, PLB 419) A survey of molecular phenomena unique to plant systems. Topics will include: genome organization and synteny between plant genomes, transcriptional and post-transcriptional control of gene expression, signal transduction, epigenetics, plant-pathogen interactions and responses to biotic- and abiotic-stresses. Prerequisite: CSEM 305.

CSEM420 - Crop Pest Control 420-4 Crop Pest Control. (Same as PSAS 420) Study of field pests of forest, orchard, field, and garden crops; pest control principles and methods; control strategy; and consequences of pest control operations. Prerequisite: CSEM 200. Lab fee: \$35.

CSEM425 - Environmental Plant Phys 425-4 Environmental Physiology of Plants. (Same as PLB 425; Same as PSAS 425) The environmental physiology of plants focuses on the 1) influence of abiotic factors (e.g., light, water, temperature, nutrients, pollutants) on growth, development, and yield; 2) mechanisms by which plants respond to these abiotic factors; 3) use of biotechnology to increase abiotic stress tolerance in model and crop plants. Prerequisite: PLB 320 or CSEM 409. A \$35 laboratory fee will be assessed.

CSEM426 - Genomics & Bioinformatics 426-4 Genomics and Bioinformatics. (Same as PSAS 426) This course is designed to introduce students from a variety of backgrounds and departments to the scope and methodology of genomic and bioinformatic sciences. Real problems and solutions from genome data analysis are studied in this course to see how high throughput genomics is driving bioinformatics, and changing the biological sciences in revolutionary way. Prerequisite: CSEM 305.

CSEM427 - Plant Biochemistry 427-5 Plant Biochemistry. (Same as PLB 427 and PSAS 427) Exploration of fundamental biochemical pathways in plants with an emphasis upon carbon and nitrogen metabolism. Not for graduate credit. Special approval needed from the department. Lab fee: \$35.

CSEM433 - Intro to Ag Biotechnology 433-3 to 7 Introduction to Agricultural Biotechnology. (Same as AGSE 433, ANS 433, HORT 433, PLB 433, PSAS 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches

to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer, and expression will be derived. Not for graduate credit. Special approval needed from the department.

CSEM435 - Ag Molecular Biotech Seminar 435-1-4 Agricultural Molecular Biotechnology Seminar. (Same as ANS 435 and PSAS 435) Molecular biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded P/F. Not for graduate credit.

CSEM438 - Molecular Genetics Lab 438-3 Plant and Animal Molecular Genetics Laboratory. (Same as PLB 438, PSAS 438, AGSE 438, ZOOL 438) Arabidopsis and Drosophila model organisms, lab-based training in laboratory safety, reagent preparation, phenotype analysis, genetics, DNA and RNA analysis, PCR, cDNA construction, cloning and sequencing of genes. Includes plant and bacterial transformation, and a population level analysis of genetic variation using RAPD markers in grasses and Alu insertion in humans. Two 2-hr labs and one 1-hr lecture per week. Not for graduate credit. Prerequisite: BIOL 305 or equivalent or consent of instructor. Lab fee: \$30.

CSEM441 - Soil Morphology & Classification 441-3 Soil Morphology and Classification. (Same as PSAS 441) Development, characteristics, and identification of soils, study of profiles; and interpretation and utilization of soil survey information in land use planning. Not for graduate credit. Prerequisite: CSEM 240. Field trip costing approximately \$5.

CSEM442 - Soil Physics 442-3 Soil Physics. (Same as PSAS 442) A study of the physical properties of soils with special emphasis on soil and water relationships, soil productivity, and methods of physical analysis. Not for graduate credit. Prerequisite: CSEM 240.

CSEM443 - Soil Management 443-3 Soil Management. (Same as PSAS 443) The soil as a substrate for plant growth. Properties of the soil important in supplying the necessary mineral nutrients, water and oxygen and for providing an environment conducive to plant root system elaboration. Soil management techniques important in optimizing plant growth. Not for graduate credit. Prerequisite: CSEM 240.

CSEM445 - Irrigation Principles & Practices 445-3 Irrigation Principles and Practices. (Same as PSAS 445) This course will cover basic principles of irrigation sciences; water requirements of crops; soil water relationship; water application methods including flooding, sprinkler, and drip (or trickle) systems; water conveyance, distribution and measurement; evaluation of irrigation efficiency; and irrigation scheduling. Considerations will also include crop production effects and economic aspects of irrigation. Not for graduate credit. Prerequisite: CSEM 240.

CSEM446 - Soil & Water Conservation 446-3 Soil and Water Conservation. (Same as PSAS 446) Covers the principles of hydrologic processes and soil erosion. Consideration will be given to the occurrence of soil erosion as it affects humans, food production, and the environment. The methods and technologies for protecting against and controlling of erosion will also be discussed. Not for graduate credit. Special approval needed from the department.

CSEM447 - Fertilizers & Soil Fertility 447-3 Fertilizers and Soil Fertility. (Same as PSAS 447) Recent trends in fertilizer use and the implications of soil fertility build up to sufficiency and/or toxicity levels; the behavior of fertilizer material in soils and factors important in ultimate plant uptake of the nutrients; the plant-essential elements in soils and ways of assessing their needs and additions; tailoring fertilizer for different uses and management systems; implication of excessive fertilization in our environment. Not for graduate credit. Concurrent enrollment in CSEM 448 required. Prerequisite: CSEM 240.

CSEM448 - Soil Fertility Evaluation 448-2 Soil Fertility Evaluation. (Same as PSAS 448) A laboratory course designed to acquaint one with practical soil testing and plant analysis methods useful in evaluating soil fertility and plant needs. One hour lecture, two hours laboratory. Not for graduate credit. Concurrent enrollment in CSEM 447 required. Prerequisite: CSEM 240. Lab fee: \$15.

CSEM454 - Soil Microbiology 454-4 Soil Microbiology. (Same as MICR 454, PSAS 454) A study of microbial numbers, characteristics and biochemical activities of soil microorganisms with emphasis on

transformations of organic compounds, nitrogen phosphorus, sulfur, iron, and plant essential nutrients. Not for graduate credit. Prerequisite: CSEM 240 or MICR 301. Lab fee: \$15.

CSEM455 - Plant-Microbe Interactions 455-3 Biology of Plant-Microbe Interactions. (Same as PSAS 455) The molecular basis of host-pathogen interactions and disease development in plants is examined with a critical review of original and current literature focusing on the mechanisms of pathogenesis, virulence, disease development and resistance, and response mechanisms in plants. Prerequisite: CSEM 200.

CSEM468 - Weeds-Their Control 468-3 Weeds - Their Control. (Same as PSAS 468) Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction, mechanical, biological, and chemical control of weeds. State and Federal legislation pertaining to weed control herbicides. Herbicide commercialization. Not for graduate credit. Prerequisite: CSEM 200. Field trips costing approximately \$5.

Crop, Soil and Environmental Management Faculty

Bond, Jason, Professor, Ph.D., Louisiana State University, 1999.

Chong, She Kong, Professor, Emeritus, Ph.D. University of Hawaii, 1979.

Fakhoury, Ahmad, Associate Professor, Ph.D., Purdue University, 2001.

Gage, Karla, Assistant Professor, Ph.D., Southern Illinois University, 2013.

Jones, K. L., Professor and Chair, Ph.D., Texas A&M University, 1999.

Kantartzi, Stella, Associate Professor, Ph.D., Aristotle University of Thessaloniki, 2006.

Klubek, Brian P., Professor, Emeritus, Ph.D., Utah State University, 1977.

Lightfoot, David A., Professor, Ph.D., University of Leeds, 1984.

McGuire, James M., Professor, Emeritus, Ph.D., North Carolina State University, 1961.

Meksem, Khalid, Professor, Ph.D., University of Cologne, 1995.

Olsen, Farrel J., Professor, Emeritus, Ph.D., Rutgers University, 1961.

Russin, John S., Professor, Emeritus, Ph.D., University of Kentucky, 1983.

Schmidt, Michael E., Associate Professor, Emeritus, Ph.D., Southern Illinois University, 1994.

Stucky, Donald J., Professor, Emeritus, Ph.D., Purdue University, 1963.

Tweedy, James A., Professor, Emeritus, Ph.D., Michigan State University, 1966.

Varsa, Edward C., Professor, Emeritus, Ph.D., Michigan State University, 1970.

Curriculum and Instruction

The Department of Curriculum and Instruction offers three majors in its undergraduate program: early childhood with specializations in preschool/primary and child and family services; elementary education; and secondary social science. A minor in child and family services is also available, as well as courses for those students pursuing the standard high school licensure program. The department offers programs to prepare teacher candidates to qualify for the following Illinois teaching licenses: Early Childhood Teacher Endorsement (for teaching ages 0-8); Elementary Teacher License (for teaching in grades 1-6); or High School Teacher License (for teaching in grades 9-12). Teacher candidates may enter the department (1) directly from within the College of Education and Human Services, (2) from the Exploratory Student Advisement program, (3) from other academic units, or (4) from other institutions of higher education. Transfer courses to be considered toward specific Curriculum and Instruction program requirements will be reviewed for possible articulation by the Department of Curriculum and Instruction.

The Secondary Education, Early Childhood Preschool-Primary, Elementary Education, and Social Science programs in Curriculum and Instruction are accredited by the National Council for Accreditation of Teacher Education, and approved by the Illinois State Board of Education (ISBE).

EARLY CHILDHOOD MAJOR

This program encompasses the professional training needed to assume a variety of roles such as infant development specialists; early childhood teachers and administrators; teacher and parent educators; family service workers; and teachers of children in elementary schools (pre-kindergarten through second grade).

Early Childhood Major - Preschool/Primary Specialization

Teacher candidates interested in teaching children 0-8 years of age in private or state-approved settings may elect to participate in the early childhood major leading to an early childhood endorsement. Specifically designed to prepare future teachers of children up to the age of eight, this program will lead to the State of Illinois Professional Educator License.

There are sequential steps for advancement in the Preschool/ Primary specialization of the Early Childhood major. Such advancement is based not only on continued satisfactory academic performance, but also on acceptable professional behaviors and competencies as reflected in the state standards for licensure (Illinois Professional Teaching Standards), the NAEYC Professional Teaching Standards, the Early Childhood Content Area Standards, and the Social Emotional Standards for all teachers. Teacher candidates are required to demonstrate their mastery of these standards through their performance in their courses and in the field.

Teacher candidates must satisfactorily complete the requirements for admission to the Teacher Education Program in order to begin their clinical practice in this major. CI 318A CI 318B and CI 405A CI 405B may not be taken more than two times, and teacher candidates must have the consent of the department to repeat these courses. Teacher candidates must earn a grade of C or better in EDUC 214 to enroll in CI 318A, CI 318B and CI 405A, CI 405B.

To be eligible for student teaching, teacher candidates must have attained a minimum grade point average of 2.75 in the major, attained a minimum overall grade point average of 2.75, and completed the following courses with a grade of C or better: CI 217, CI 225, CI 318A, CI 318B, CI 337, CI 361, CI 388, CI 405A, CI 405B, CI 413, CI 418, CI 419, CI 426, CI 431, CI 432, CI 434, EDUC 211, EDUC 214, EDUC 301, EDUC 302, EDUC 303, EDUC 313, EDUC 308, EDUC 319, EDUC 401A, KIN 202, and SPED 412; have made preliminary application for student teaching; and be approved by the faculty of the early childhood major based on performance in the above courses. Applications for student teaching must be submitted within the first two weeks of the semester during which the teacher candidate is enrolled in CI 337.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
To include MATH 108; HED 101; POLS 114 and HIST 110; ENGL 101, ENGL 102; SCI 210A, SCI 210B; CMST 101; UNIV 101; EDUC 211; 3 credit hours in Fine Arts (Fine Arts options: AD 100A, AD 100B, AD 101; HIST 201; MUS 103; THEA 101), and 6 credit hours in Humanities (Humanities options: CLAS 270, CLAS 271; CP 358I; EA 102; ENGL 121, ENGL 204; HIST 101A, HIST 101B, HIST 358I; LING 200; MATH 300I; PHIL 307I).	
Preschool/Primary Specialization Requirements	56
CI 217, CI 225, CI 318A, CI 318B, or AD 328, CI 337, CI 361, CI 388, CI 405A, CI 405B, CI 413, CI 418, CI 419, CI 426, CI 431, CI 432, CI 434; MATH 120, MATH 220; KIN 202; and SPED 412.	

Degree Requirements	Credit Hours
Professional Education Sequence	27
EDUC 214, EDUC 301, EDUC 302, EDUC 303, EDUC 313, EDUC 308, EDUC 319, EDUC 401A.	
Total	122

Early Childhood Major - Child and Family Services Specialization

The child and family services specialization offers preparation leading to a variety of positions involving work with children and families in early childhood programs and social service agencies. Such positions may include: administrator and/or teacher in non-public school programs, including child care centers; child development specialist; infant-toddler teacher; child life specialist in hospital; family life specialist in social service agencies; specialist in parent education; and parent liaison and family advocate.

There are sequential steps for advancement in the Child and Family Services specialization of the Early Childhood major. Such advancement is based not only on continued satisfactory academic performance, but also on acceptable professional behaviors that the faculty deem essential for competent and effective work with children and families. In order to assess mastery of these behaviors, students are evaluated on their performance in their courses and in the field.

An overall minimum GPA of 2.5 is required to register for the following major courses: CI 318A, CI 318B, CI 405A, CI 405B, CI 417, and CI 419. Students must earn a grade of C or better in EDUC 214 to enroll in CI 318A, CI 318B, and CI 405A,B. CI 318A,B, CI 395, CI 405A,B, and CI495 may not be taken more than two times, and students must have the consent of the department to repeat these courses.

To be eligible for the internship, the student must have attained a minimum GPA of 2.5 in the major, an overall GPA of 2.0, have completed CI 227, CI 317, CI 318A, CI 318B, CI 327, CI 337, CI 395, and CI 405A, CI 405B with a grade of C or better, and have consent of the field experience instructor. A minimum of twelve semester hours of coursework from one of the recommended elective areas is also required prior to enrollment in the internship.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
To include: EDUC 214; PSYC 102	
Child and Family Specialization Requirements	50
CI 227, CI 317, CI 318A, CI 318B, CI 327, CI 337, CI 395, CI 402, CI 403, CI 405A, CI 405B, CI 417, CI 419, CI 495	41
PSYC 331	3
HED 351	3
SPED 300	3
Electives	29
Recommended for Early Childhood Program Director: The following 21 hours are required for the Illinois Director	

Degree Requirements	Credit Hours
Credential: CI 418, 487; ACCT 210; ENGL 291, FIN 270; MGMT 350; SOCW 383. Other recommended electives include CI 325, CI 421, CI 498H, CI 498Q, PSYC 303; SOCW 275.	
Recommended for Child Development Specialist: CI 325, CI 413, CI 498H; REHB 401, REHB 407; SOCW 291, SOCW 275, SOCW 295, SOCW 361, SOCW 383; SPED 425, SPED 412, SPED 405.	
Recommended for Parent Educator: CI 325, CI 413, CI 498H; HED 312; PSYC 306, PSYC 331; SOC 302, SOC 321; SOCW 275, SOCW 295, SOCW 383, SOCW 421; SPED 425.	
Recommended for Social Service Specialist: CMST 201, CMST 262, CMST 383; CI 498H; PSYC 301, PSYC 303, PSYC 331, PSYC 333; SOC 321, SOC 340, SOC 423; WGSS 201, WGSS 341, WGSS 442.	
Total	120

Graduates of Shawnee Community College with an Associate in Applied Science (A.A.S.) degree in Early Childhood Education and meeting SIU admission requirements will be considered for admission into SIU's Bachelor of Science (B.S.) degree in Early Childhood-Child and Family Services Specialization through the Capstone Option. Acceptance into the Capstone Option reduces the University Core Curriculum to 30 hours and makes it possible for the student to complete the degree in approximately 60 additional hours beyond the earned A.A.S. degree.

Elementary Education Major

A Bachelor of Science degree with a major in elementary education entitles students to apply for the State of Illinois Professional Educator License with an Elementary Education endorsement, which will allow them to teach in first grade through sixth grade.

Admission. All students who plan to major in Elementary Education must apply to the Teacher Education Program in the College of Education and Human Services. To be eligible for the Curriculum and Instruction methods courses and the Professional Education Sequence, elementary education majors must (1) be admitted to the Teacher Education Program; (2) have completed 30 semester hours with an overall grade point average of 2.75 (4.0 scale); and (3) have obtained a satisfactory score on the Illinois Test of Academic Proficiency or ACT+. In addition, elementary education majors entering the methods/professional sequence must have successfully completed the following University Core Curriculum courses with a grade of C or better: (a) POLS 114, HIST 110 and (b) ENGL 101, 102, CMST 101, SCI 210A and B, and CI/MATH 120, MATH 220, or equivalent.

Advancement. Advancement in the major is based not only on continued satisfactory academic performance (grade of C or better for methods and professional sequence courses), but also on acceptable professional behaviors and competencies as reflected in the state standards for licensure: the Illinois Professional Teaching Standards, Elementary Education Standards, and Social Emotional Standards for all teachers. These standards are deemed essential for competent and effective educators. Students are required to demonstrate their achievement of these standards through their performance in their courses and in the field. The elementary education program is designed to be taken over four semesters with each semester containing a field experience.

To continue in the elementary education program, a student must maintain a 2.75 GPA in the major, earn a C or better in the elementary and professional core courses, and demonstrate appropriate progress

toward meeting the Illinois Professional Teaching and Content standards. Students in the elementary education major may repeat the same Curriculum and Instruction course only once. Students must have the consent of the department to register for a repeat course.

To be eligible for the professional semester (student teaching), and completion of the program, the student must have attained a minimum grade point average of 2.75 in the major and a minimum overall grade point average of 2.75; completed CI 388, CI 389, and CI 225, CI 337, CI 361, CI 362, CI 418, CI 419, CI 426, CI 427, CI 431, CI 432, CI 433, and CI 434 with a grade of C or better; have made application for the professional semester; and be approved by the department based on performance in all major courses.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
To include MATH 108; HED 101; ENGL 101, 102; SCI 210A,B; POLS 114; HIST 110; EDUC 211; CMST 101; UNIV 101; 3 credit hours in Fine Arts (Fine Arts options: AD 100A, AD 100B, AD 101; HIST 201; MUS 103; THEA 101), and 6 credit hours in Humanities (Humanities options: CLAS 270, CLAS 271; CP 358I; EA 102; ENGL 121, ENGL 204; HIST 101A, HIST 101B, HIST 358I; LING 200; MATH 300I; PHIL 307I).	
Elementary Education Major Requirements	54
CI 388, CI 389; CI 225 or AD 328; CI 337, CI 361, CI 362, CI 418, CI 419, CI 426, CI 427, CI 431, CI 432, CI 433, CI 434; KIN 202; CI/MATH 120, MATH 220, MATH 282.	
Professional Education Sequence	27
EDUC 214, EDUC 301, EDUC 302, EDUC 303, EDUC 313, EDUC 308, EDUC 319, EDUC 401A, EDUC 401C.	
Total	120

Social Science Major

A Bachelor of Science degree in Social Science Education prepares students to qualify for the State of Illinois Professional Educator License with a Social Science-History endorsement. The second option is a Bachelor of Arts Degree in History (see History Department). All teacher candidates pursuing a Social Science Major in the College of Education and Human Services will work toward a designation in history, and they will select an additional concentration in geography or political science.

The complex nature of our competitive, pluralistic society mandates social science curricula, which prepares future citizens to comprehend and adjust to a changing social environment. The goal of the social science program is to prepare guiding middle school/junior high and senior high school students to live as effective citizens in a democratic society. Content and professional coursework provide the foundation used in the social science methods course, where teaching methods and strategies are explored and experienced. A series of clinical practices provide the Social Science major an opportunity to use the knowledge and skills acquired in the program. A cooperating teacher or mentor teacher, if the person has had mentor training, and a clinical supervisor will assist the teacher candidate to blend knowledge and skills with the adolescent behavior and curriculum needs.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
To include GEOG 103 and HIST 301 as Core Social Science; GEOG 104 as Group I Science; HIST 101A and HIST 101B as Core Advanced Humanities substitutes; HIST 300 as Core Multicultural substitute.	
Requirements for a Designation in History	21
HIST 367	3
HIST 392	3
Three additional 400 level U.S. history courses	9
Two additional 300-400 level non-U.S. history courses	6
Requirements for Social Science Major	18
ECON 113; ECON 240 or ECON 241; POLS 114; POLS 170 or POLS 270; PSYC 102; or SOC 108	
Additional Requirements for Social Science Concentration	6
POLS 213 or POLS 214; POLS 300 OR GEOG 304; GEOG 310I/GEOG 300I	3+3
Education Requirements	39
Professional Education Requirements	30
EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 311, EDUC 313, EDUC 314, EDUC 319, EDUC 401A Additional Licensure Requirements	9
Additional Licensure Requirements - CI 360, CI 469, CI 470	9
Total	125

Child and Family Services Minor

The minor in child and family services is designed to provide students with basic knowledge in early childhood and family studies. The selection of coursework is flexible so that courses can be adapted to the special interests of students with diverse backgrounds and goals. Students are expected to honor all prerequisites in their selection of courses. A minimum of 18 hours of coursework is required as follows:

CI 227, EDUC 214 - 6; electives to be chosen from the following: CI 217, CI 327, CI 337, CI 390H, CI 390Q, CI 403, CI 413, CI 419, CI 498H, CI 498Q - 12.

A grade of C or better must be earned for all courses in the minor.

Curriculum and Instruction Courses

CI112 - Strategic Reading Lab 112-1 Strategic Reading Lab. The strategic reading lab assists students in mastering the strategies necessary to interact with and comprehend college text(s). The lab is taught in conjunction with ENGL 101 so that students can become more aware of their reading and writing behaviors. The lab focuses on strategies with text(s) and critical analysis of text(s).

CI120 - Math for Elem School I 120-3 Mathematics Content and Methods for Elementary School I. (Same as MATH 120) Modern approaches to mathematics instruction for the elementary grades. Mathematics content includes problem solving, intuitive set theory, development of whole numbers, integers and rational numbers and the fundamental arithmetic operations. Place value. Prime numbers and divisibility properties. Computation includes students' informal mathematics, mental computation and estimation, algorithms and the appropriate use of calculators. Emphasis is placed throughout on reasoning, multiple representations of mathematical concepts, making connections and communication. Three hours lecture/laboratory per week. Prerequisite: Three years of college preparatory mathematics including Algebra I, Algebra II and Geometry and satisfactory placement score.

CI199 - Intro College Research 199-1 Introduction to College Research. Use of resources such as the library, electronic databases, and the Internet in order to find, evaluate, and use information effectively, efficiently, and ethically. Students will learn to determine the extent of the information needed, as well as learn to use software tools to manage their research.

CI217 - Guiding Play 217-3 Guiding Play and Building Learning Communities. Focuses on play as an integral part of child's learning. Covers play theory and design of the learning environment. Learning how to promote prosocial behaviors through supportive relationships and environments within diverse settings and guide self-regulation, prosocial development and task engagement of children. Emphasis on appropriate ways to guide children in their play activities and routines, and ways to develop creativity in children. Requires several independently scheduled observations of children's play in the campus Child Development Laboratories.

CI220 - Math Content Elem School II 220-3 Mathematics Content and Methods for the Elementary School II. (Advanced University Core Curriculum Course) (Same as MATH 220) Modern approaches to mathematics instruction for the elementary grades. Mathematics content focuses on rational and irrational numbers. Ordering of numbers. Decimal representations. Percents. Ratio and Proportion. Perimeter and area concepts. Pythagorean Theorem. Concept of square root and nth root. Exponent notation. Elementary geometry. Triangles, quadrilaterals, polygons, angles associated with a polygon. Reflectional and rotational symmetry. Congruence and Similarity. Tessellations. Transformations: translations, rotations, reflections. Measurement of perimeter, area, surface area, volume, mass, temperature. Conversion of measurements. Emphasis is placed throughout on reasoning, multiple representations of mathematical concepts, making connections and communication. Prerequisite: C or better in CI 120, Mathematics 120 or equivalent.

CI225 - Young Children & the Arts 225-3 Young Children and the Arts. The development of creativity in young children. Methods and curriculum that foster creativity in graphic expression, music and creative movement among preschool and primary school children.

CI227 - Relationships & Family Develop 227-3 Intimate Relationships and Family Development. (Same as WGSS 286) (University Core Curriculum) [IAI Course: S7 902] This course will explore topics related to intimate relationships, including attraction, communication, dating, cohabitation, marriage and conflict. Study of changing patterns in family living throughout the family life cycle and the dynamic relationships within families. Students will critically evaluate current theory and research concerning the elements of family relationships.

CI237 - Early Child Development I 237-3 Early Child Development I. This introductory course in child development surveys major milestones in children's social, emotional, physical, and intellectual development. Students are exposed to current developmental theories, as well as practices recommended for parents and teachers to support healthy development in children from infancy through the primary grades.

CI258 - Credit for Work Experience 258-1 to 4 Credit for Work Experience. This course includes work experiences relevant to the student's major program, such as work in child care centers, teacher's aid in public school, or with federal, state, or local agencies or programs that deal with children. Prerequisite: 12 semester hours completed with a grade of B or better in the student's major area of concentration in the Curriculum and Instruction department and consent of Curriculum and Instruction Academic Affairs Committee.

CI318A - Early Childhood Curriculum 318A-3 Early Childhood Curriculum. This class will prepare students to plan optimal learning environments for preschool children. Emphasis is placed on integrated learning and appropriate instructional methods in language, literacy, social studies, math and science. Students are required to have concurrent enrollment in CI 318B. Prerequisites: C or better in EDUC 214 and CI 217. Consent of the instructor is required for non-early childhood majors and graduate students.

CI318B - Clinical Exp Early Child Curr 318B-1 Clinical Experiences in Early Childhood Curriculum. This practicum will prepare students to work in optimal learning environments for preschool children. Participation is one-half day per week for the semester at the SIU Child Development Laboratories. Students are required to have concurrent enrollment in CI 318A. Prerequisites: C or better in EDUC 214 and CI 217. Consent of instructor is required for non-early childhood majors and graduate students.

CI321 - Math for Elem School III 321-3 Mathematics Content and Methods for the Elementary School III. (Same as MATH 321) Modern approaches to mathematics instruction for the elementary grades. Mathematics content focuses on: straight-edge and compass construction. Justification and proof of geometric properties. Three-dimensional geometry. Coordinate geometry. Transformations expressed in coordinate notation. Analysis of linear relationships geometrically and algebraically. Modeling various "real-world" situations by linear equations and inequalities. Setting up and solving equations and inequalities. Exploration of statistical data. Representation of data, interpretation of data, misrepresentation of data. Introduction to the fundamental ideas of statistics; measures of spread and central tendency. Introduction to the fundamental concepts of probability. Counting techniques needed for calculating probabilities. Dependent and independent events. Conditional probability. Odds, expected value. Simulation. Emphasis is placed throughout on reasoning, multiple representations of mathematical concepts, making connections and communication. Prerequisite: C or better in CI 220, Mathematics 220 or equivalent.

CI322 - Math for Elem School IV 322-3 Mathematics Content and Methods for the Elementary School IV. (Same as MATH 322) Modern approaches to mathematics instruction for the elementary grades. Mathematics content focuses on: algebra and algebraic thinking, geometry, relations and functions and their applications to real-life problems. Emphasis is placed throughout on reasoning, multiple representations of mathematical concepts, making connections and communication. Prerequisite: C or better in CI 321 or Mathematics 321.

CI324 - Teach Tools Early Child Clssrm 324-3 Teaching Tools for the Early Childhood Classroom. In this course, students will learn to use multimedia technology and group management strategies appropriate for Kindergarten through third grade classrooms. They will develop professional leadership and collaboration skills and apply professional standards to analyze and reflect on their work. Prerequisite: admission to the Teacher Education Program, CI 318 or concurrent enrollment in CI 318, or consent of instructor.

CI327 - Family Studies 327-3 Family Studies. Study of changing patterns in family living throughout the family life cycle. Insights into common current family problems typical of each stage of the family life cycle. Prerequisite: CI 227.

CI337 - Child Dev Assessment 337-3 Assessment of Child Development. Study of the major theories of child development and children's development in the areas of physical development, perceptual development, cognitive development, language development, social, and emotional development. Students will develop observational strategies for studying, understanding, and assessing children's development and learn various approaches to assessment of development and learning in young children. Each student will perform an "authentic" assessment. Prerequisite: EDUC 214 (C or better).

CI360 - Tch Read Write Secndry Content 360-3 Teaching Reading and Writing in the Secondary Content Areas. State and national standards for teachers require that teachers know and demonstrate a wide range of literacy methods and skills to promote effective and appropriate classroom communication.

This course provides teachers with the knowledge and skills to teach reading and writing in the secondary content areas. Restricted to admission to the Teacher Education Program or consent of instructor.

CI361 - SS Teach Methods PreK-4 361-3 Social Studies Teaching Methods (PreK-4th Grade). This course emphasizes the structure, content, and process of teaching social studies in Prekindergarten through 4th grade classrooms. Teacher candidates develop short-term and long-term instructional plans that integrate content areas, address the needs of diverse learners, engage students in the processes of critical thinking, and facilitate effective use of current and emerging digital tools to locate and analyze, evaluate, and use information sources to support research and learning. Early Childhood majors must take CI 318A,B prior to taking this course. Prerequisite: CI 431.

CI362 - ELED ML SS Methods 4-8 362-3 Teaching Elementary/Middle Level Social Studies Methods, Grades 4-8. This course emphasizes the structure, content, and process of teaching social studies/social sciences in the elementary/middle level school setting, especially grades 4-8. Specific attention is given to the fundamentals of developing social studies/social sciences content knowledge, literacy skills and objectives, planning interdisciplinary units of instruction (IDU), integrating various instructional strategies and methods to meet the diverse learning needs in the elementary/middle level setting, developing a general teaching model, organizing the curriculum, assessing learning processes, and facilitating effective use of current and emerging digital tools to locate and analyze, evaluate, and use information sources to support research and learning, as well as designing multi-tiered interventions. Prerequisite: CI 361.

CI388 - Int Math Cont & Methods P-4 388-3 Integrated Math Content and Methods for Teachers (PreK-4th Grade). (Same as MATH 388) This course is designed for early childhood and elementary school teachers, focusing on Preschool through 4th grade mathematics content and methods. Math content covers the developmental progression of concepts and skills in counting and cardinality, numbers and operations in base-ten system, algebraic thinking, fractional reasoning, measurement and data, and geometry. Methods of math teaching are integrated with the delivery of math content. The course showcases standards-based mathematical practices including problem solving, mathematical modeling, communication and justification, use of tools and technology, assessment and intervention, diverse learner support, building supportive math environments, lesson planning, and making interdisciplinary connections. Prerequisite: CI/MATH 220.

CI389 - Int Content & Methods 4-8 389-3 Integrated Math Content and Methods for Teachers (4th-8th Grade). (Same as MATH 389) Designed for elementary and middle school teachers, focusing on 4th-8th grade math content and methods. Math content covers the developmental sequence of grade-appropriate mathematical concepts and skills in number systems, operations and algebraic thinking, ratios and proportional relationships, expressions and equations, functions and applications, measurement and data analysis, statistics and probability, and geometry. Methods of math teaching are integrated with delivery of math content. The course showcases standards-based mathematical practices including problem solving, mathematical modeling, communication and justification, use of tools and technology, informative assessment, meeting the needs of diverse learners, building supportive math environments, lesson planning, and making interdisciplinary connections. Co-requisites: EDUC 302 and EDUC 319. Prerequisites: CI 388, MATH 108, and MATH 282 with grades of C or better.

CI390A - Readings - Curriculum 390A-1 to 3 Readings-Curriculum. In-depth reading in various areas of education as related to the field of curriculum. Special approval needed from the instructor.

CI390C - Readings - Language Arts 390C-1 to 3 Readings-Language Arts. In-depth reading in various areas of education as related to the field of language arts. Special approval needed from the instructor.

CI390D - Readings - Science 390D-1 to 3 Readings-Science. In-depth reading in various areas of education as related to the field of science. Special approval needed from the instructor.

CI390E - Readings - Mathematics 390E-1 to 3 Readings-Mathematics. In-depth reading in various areas of education as related to the field of mathematics. Special approval needed from the instructor.

CI390F - Readings - Reading 390F-1 to 3 Readings-Reading. In-depth reading in various areas of education as related to the field of reading. Special approval needed from the instructor.

CI390G - Readings- Social Studies 390G-1 to 3 Readings-Social Studies. In-depth reading in various areas of education as related to the field of social studies. Special approval needed from the instructor.

CI390H - Readings-Early Childhd Educ 390H-1 to 3 Readings-Early Childhood Education. In-depth reading in various areas of education as related to the field of early childhood education. Special approval needed from the instructor.

CI390I - Readings-Elementary Educ 390I-1 to 3 Readings-Elementary Education. In-depth reading in various areas of education as related to the field of elementary education. Special approval needed from the instructor.

CI390J - Readings-Middle School 390J-1 to 3 Readings-Middle School. In-depth reading in various areas of education as related to the field of middle school. Special approval needed from the instructor.

CI390M - Readings - Instruction 390M-1 to 3 Readings-Instruction. In-depth reading in various areas of education as related to the field of instruction. Special approval needed from the instructor.

CI390N - Readings-Educational Media 390N-1 to 3 Readings-Educational Media. In-depth reading in various areas of education as related to the field of educational media. Special approval needed from the instructor.

CI390O - Readings-Environmental Educ 390O-1 to 3 Readings-Environmental Education. In-depth reading in various areas of education as related to the field of environmental education. Special approval needed from the instructor.

CI390P - Readings-Children's Literature 390P-1 to 3 Readings-Children's Literature. In-depth reading in various areas of education as related to the field of children's literature. Special approval needed from the instructor.

CI390Q - Readings-Family Studies 390Q-1 to 3 Readings-Family Studies. In-depth reading in various areas of education as related to the field of family studies. Special approval needed from the instructor.

CI393A - Indiv Research Educ-Curriculum 393A-1 to 6 Individual Research in Education-Curriculum. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393C - Indiv Res Educ-Language Arts 393C-1 to 6 Individual Research in Education-Language Arts. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393D - Indiv Research in Educ-Science 393D-1 to 6 Individual Research in Education-Science. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393E - Indiv Research Ed-Mathematics 393E-1 to 6 Individual Research in Education-Mathematics. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393F - Indiv Research Educ-Reading 393F-1 to 6 Individual Research in Education-Reading. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393G - Indiv Res Educ-Social Studies 393G-1 to 6 Individual Research in Education-Social Studies. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393H - Ind Res Educ-Early Childhood 393H-1 to 6 Individual Research in Education-Early Childhood Education. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393I - Indiv Res Ed - Elementary Ed 393I-1 to 6 Individual Research in Education-Elementary Education. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393J - Indiv Res in Ed-Middle School 393J-1 to 6 Individual Research in Education-The Middle School-Junior High School. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393M - Indiv Res Educ-Instruction 393M-1 to 6 Individual Research in Education-Instruction. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393N - Ind Res Ed- Educational Media 393N-1 to 6 Individual Research in Education-Educational Media. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393O - Indiv Res Ed-Environmental Ed 393O-1 to 6 Individual Research in Education-Environmental Education. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI393Q - Ind Res Educ-Family Studies 393Q-1 to 6 Individual Research in Education-Family Studies. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff. Maximum of 6 hours to be counted toward a bachelor's degree. Special approval needed from the instructor.

CI395 - Field Observation 395-3 Field Observation. This course focuses on the development of professional skills in work with young children and families and the exploration of career opportunities within Child and Family Services. Students will participate in practical experiences in social service agencies and early childhood programs, completing two 7-week half-day practicum experiences in different community settings. Restricted to the major.

CI401 - Games & Simulations 401-6 (3,3) Designing Digital Games and Simulations. This course focuses on the design and development of simulated environments (such as digital games and virtual worlds) and how they may be used for the delivery of online learning and instruction. The production process will focus on the use of suitable technologies and game development toolkits to create immediately usable prototypes for learning showcases.

CI402 - Study of Cultural Diversity 402-3 The Study of Cultural Diversity in Education and Family Services. The student examines origins, characteristics of behavior, learning patterns, family constellations, and lifestyles of the diverse cultural groups in our community, state, and nation. Students will identify their own cultural background and biases; recognize diversity resulting from ethnic origin, gender, age, or disability; and experience ways of learning about cultures other than their own that promote constructive communication and integration into all aspects of schooling, teaching, and family services.

CI403 - Child Abuse and Neglect 403-3 Child Abuse and Neglect. Examines the many facets of child abuse and neglect. Emphasis is on current research in the field, as well as the roles and responsibilities of various professionals who work with children and their families.

CI404 - Infant Development 404-3 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory field observations. Prerequisite: CI 237 or PSYC 301 or equivalent.

CI405A - Infant & Toddler Development 405A-3 Infant and Toddler Development. This course is designed to be an overview of theoretical and research-based understandings of infant development. Principles of development as well as dynamics of human behavior and relations will be explored. A topical approach is taken to allow the understanding of how broad concepts of development apply to infant development. Application of developmental knowledge involved for working with infants and toddlers. Students are required to have concurrent enrollment in CI 405B. Prerequisites: C or better in EDUC 214, CI 217, CI 318A and CI 318B.

CI405B - Infant & Toddler Practicum 405B-1 Infant and Toddler Practicum. This practicum will prepare students to conceptualize and implement optimal learning environments for infants and toddlers. Participation is one half day per week (fall and spring) or two half days per week (summer). Students are required to have concurrent enrollment in CI 405A. Prerequisites: C or better in EDUC 214, CI 217, CI 318A, and CI 318B.

CI407C - Diagnostic Tch Stry Lang Arts 407C-3 Diagnostic Teaching Strategies for Classroom Teachers-Language Arts. Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students underachieving. Prerequisite: CI 423 or consent of instructor.

CI407E - Diagnostic Teach Strategy-Math 407E-3 Diagnostic Teaching Strategies for Classroom Teachers-Mathematics. Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students underachieving. Prerequisite: CI 322 or consent of instructor.

CI407F - Diagnostic Tch Stratgy-Reading 407F-3 Diagnostic Teaching Strategies for Classroom Teachers-Reading. Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students who are underachieving. Prerequisite: CI 432 and CI 433 with grades of C or better or consent of instructor.

CI408 - Issue Early Intervention 408-3 Current Issues in Early Intervention. This course will examine developmental ecology of early intervention and the dynamic processes by which children and their environments interact. A comprehensive overview of the knowledge base and critical assessment and implementation strategies of early childhood intervention along with intervention models and appropriate practice will be covered. Prerequisites: CI 237, SPED 405 or consent of instructor.

CI409 - Creative Teaching 409-3 Creative Teaching. To assist pre- and in-service teachers in acquiring methods and materials that will improve instruction in the public school classroom, with special attention to the characteristics and needs of students.

CI410 - Creative Writing-Public School 410-2 Creative Writing in the Public School. Techniques of encouraging creative writings in the schools.

CI411 - Research after College 411-1 Research after College. This course will acquaint students with theoretical concepts and professional resources relating to post-university research. This class will utilize professional and free resources that students will have access to after they graduate. Students will leave this class prepared to conduct research for professional or personal advancement as well as lifelong learning. Critical analysis of materials and resources will be strongly emphasized in the course.

CI412C - Early Chld Educ-Language Arts 412C-3 Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Language Arts. Examines recent findings, current practices, and materials used in early childhood education. Prerequisite: specialized methods course for the field of study selected by the student.

CI412D - Early Childhood Educ-Science 412D-3 Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Science. Examines recent findings, current practices, and materials used in early childhood education. Prerequisite: specialized methods course for the field of study selected by the student.

CI412E - Early Childhood Educ - Math 412E-3 Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Mathematics. Examines recent findings, current practices, and materials used in

early childhood education. Prerequisite: specialized methods course for the field of study selected by the student.

CI412F - Early Childhood Educ-Reading 412F-3 Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Reading. Examines recent findings, current practices, and materials used in early childhood education. Prerequisite: specialized methods course for the field of study selected by the student.

CI412G - Early Chld Educ-Social Studies 412G-3 Improvement of Instruction in Early Childhood Education (Preschool-Grade 3)-Social Studies. Examines recent findings, current practices, and materials used in early childhood education. Prerequisite: specialized methods course for the field of study selected by the student.

CI413 - Lang Devlpmnt Young Child 0-8 413-3 Language Development of the Young Child, 0-8. (Same as CDS 303) The normal language development and communication skills of the young child will be the focus of this course; attention will be given to an integrated, holistic philosophy toward development and learning in young children ages 0-8. Specifically focusing upon social and environmental influences on the development of language and literacy, students will observe, listen, record, and analyze samples of young children's communication. Prerequisite: CI 237 or PSYC 301 or graduate standing.

CI415 - Teaching Middle School Math 415-3 Teaching Middle School Mathematics [Grades 4-8]. Examines current approaches to middle school mathematics and the use of meaningful instructional materials, quantitative literacy, and technologies for problem solving. Students will share experiences and design activities for classroom use. Prerequisite: CI 322 and an overall GPA of at least 2.75, or consent of instructor.

CI417 - Admin Early Chldh & Fam Prgms 417-3 Administration of Early Childhood and Family Programs. This course introduces students to the planning, organizing and daily management of programs serving young children and their families. Topics will include funding/budgeting, staffing, programming, and evaluation. Prerequisite: CI 318.

CI418 - Critical Issues in Teaching 418-3 Critical Issues in the Profession of Teaching. This course explores the philosophical, social, and psychological foundations of teaching. Students will critically examine the forces that have influenced education at various historical periods. Students will become familiar with the perspective of critical pedagogy in understanding educational decision-making. Students will explore educational contexts that promote optimal learning and development for all students while considering the complexity and multiplicity of cultural variables and identities (e.g., ethnic, linguistic, racial, gender, physical abilities, socioeconomic, etc.). Students will explore, critically analyze, and express a personal philosophy of education. Prerequisite: EDUC 319.

CI419 - Child Fam Comm Engagement 419-3 Child, Family, and Community Engagement. This course is designed to provide students with the knowledge and skills needed to work successfully with families and caregivers in individual and community settings. The focus will be on strengthening relationships within and between home, school and community settings. Family engagement in early childhood programs and elementary schools will be stressed. Co-requisite: EDUC 319.

CI421 - Build Family Literacy Programs 421-3 Building Family Literacy Programs. This course will provide an in-depth look at family literacy. Emphasis is on the history and foundations of family literacy, related research, program models, programming, evaluation and funding. Designed for both the experienced and the developing family literacy professional. Prerequisite: CI 419.

CI422 - Teach Reading in Elem School 422-3 Teaching Reading in the Elementary School. Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis also on the formulation of a philosophy of reading and its implications in relation to methods, materials, organizational procedures, and evaluation techniques. Enrollment restricted to consent of department.

CI423 - Tch Elem School Eng Lang Arts 423-3 Teaching Elementary School English Language Arts. This course covers the oral and written communication processes with emphasis on the English language arts in the elementary school. Focus on the fundamentals of academic and social language of all users of English. Effective planning, delivery, and assessment of literacy lessons align with the Illinois Common Core learning standards for writing, speaking and listening, and reading and that accommodate all

learners in the elementary classroom, including English Language Learners (ELL) and students with Individualized Education Programs (IEP). Prerequisite: Communication Studies 101 or equivalent, C or better in CI 321 and CI 435, or consent of instructor. Note: Elementary Education majors must take CI 422 concurrently with this class.

CI426 - Teach ELEM Science P-4 426-3 An Introduction to Teaching Elementary School Science (PreK-4th Grade). Content and methods of elementary school science, grades P-4. Emphasis on materials and strategies for effective science education. One or more field trips. Prerequisites: SCI 210A, and SCI 210B. Restricted to students already admitted to the Teacher Education Program.

CI427 - Science for Teachers 4-8 427-3 Science Process and Concepts for Teachers (4th-8th Grade). Specifically designed to develop those cognitive processes and concepts needed by elementary and middle level teachers in the teaching of modern science programs. Prerequisite: CI 426, SCI 210A, and SCI 210B.

CI428 - Inqry Skls:Tchng Jr Sr HS Sci 428-3 Inquiry Skills for Teaching Junior and Senior High School Science. The major focus will be the application of inquiry skills as used in all areas of science instruction at the junior and senior high school levels; students will be expected to demonstrate mastery of basic and integrated science process skills through conducting and reporting results of science investigations.

CI429 - Instr Methods Primary Child 429-3 Instructional Methods for the Primary Child: Social Studies and Science. Emphasis on creating optimum learning environments, planning for instruction, models of teaching, integrated learning and appropriate instructional methods in science and social sciences, grades 1-3. Concurrent enrollment in CI 430 required. Prerequisites: CI 318A,B, CI 324, or consent of instructor.

CI430 - Instr Strat Primary Child Math 430-3 Instructional Strategies for the Primary Child: Mathematics. Emphasis on creating optimum learning environments, integrated learning and appropriate instructional methods in the content area of mathematics, grades 1-3. Concurrent enrollment in CI 429 required. Prerequisite: CI 318A,B, CI 324, with grades of C or better, or consent of instructor.

CI431 - Lit Foundations & Instr Models 431-3 Literacy Foundations and Instructional Models. This course provides teacher candidates with the theoretical knowledge necessary to critically examine various models of literacy instruction. It introduces the reading process, including the relationship between reading, writing, listening, and speaking; the importance of differentiating instruction for all learners; and how to select appropriate literature for use in early childhood, elementary, and middle level classrooms. Co-requisites: EDUC 301 and EDUC 313. Restricted to students already admitted to the Teacher Education Program.

CI432 - Lit Dev & Assess PreK-4 432-3 Literacy Development and Assessment (PreK-4th Grade). This course explores the variables that affect literacy development at the P-4 level. Teacher candidates will learn to employ all four strands of the English/language arts (reading, writing, speaking, and listening) to teach literacy concepts and strategies across the curriculum to accommodate all learners in culturally responsive classrooms. Emphasis will be placed on an understanding of the reading and writing process; the content of literacy instruction; and scientifically based literacy research, methods, and materials used in balanced reading instruction and assessment. Prerequisite: CI 431. Co-requisite: EDUC 302 and EDUC 319.

CI433 - Inst & Assess Adol Lit 433-3 Instruction and Assessment of Adolescent Literacy. This course explores the variables that affect literacy development at the middle level (4th-8th grade). Emphasis will be placed on an understanding of the reading and writing process; the content of literacy instruction; and scientifically based literacy research, methods, and materials used in balanced literacy instruction and assessment. There is a focus on language and literacy demands within the content areas, needs of culturally and linguistically diverse adolescent learners, and the identification of adolescents who have literacy challenges. Prerequisite: CI 432. Co-requisite: EDUC 303 and EDUC 308.

CI434 - Diag Lit Assess & Intervention 434-3 Diagnostic Literacy Assessment and Intervention. This course surveys the principles and practices of literacy assessment. Teacher candidates examine diagnostic approaches and instructional strategies that teachers employ when working with individuals who struggle with learning to read and write. There is an emphasis on the causes of reading and writing difficulties and the contribution of factors such as cultural differences, linguistic variation, student

motivation, various disabilities, and instructional approaches. It focuses on diagnostic techniques and the use of dynamic assessment to inform the design, monitoring, and evaluation of literacy instruction. Prerequisite: CI 432. Co-requisites: EDUC 303 and EDUC 308.

CI435 - Lit & Info Text Child & Adlsts 435-3 Literature and Informational Texts for Children and Early Adolescents. Students will engage with studies of various types of literature and informational texts as well as text exemplars from the common core initiative; analysis of literary qualities; selection of literature for various developmental needs of children in preschool, elementary school, and middle level settings; and research-based presentations of books and other media for use in various school settings. Prerequisite: C or better in English 101 and 102, and overall GPA of 2.75; or consent of instructor. Restriction: Admittance to the Teacher Education Program. Lab fee: \$10.

CI441 - Multicultural Lit Children 441-3 Multicultural Literature for Children. Identification, selection and evaluation of books and audiovisual materials dealing with various cultural groups such as African Americans, Asian Americans, Native Americans, Hispanic Americans and European Americans.

CI445 - Lit & Info Texts Young Adults 445-3 Literature and Informational Texts for Young Adults. This course introduces quality literature and informational texts for young adults (grades 6-12). Students will engage with genres and authors of young adult literature, text exemplars from the common core initiative, cross-curricular rationales and differentiated instructional methodologies for integrating young adult literature with content and other text.

CI462 - Middle & Jr High Sch Programs 462-3 Middle and Junior High School Programs. Focuses on the development of middle and junior high school curriculum and the identification of instructional activities for early adolescents. Emphasis is placed on development of literacy strategies, developmentally appropriate teaching strategies, interdisciplinary unit planning, teaming, and technologies and materials appropriate for teaching early adolescents, ages 10-14. Prerequisite: EDUC 313 or consent of instructor.

CI463 - Soc/Emotn Needs of Gifted Child 463-3 Meeting the Social and Emotional Needs of Gifted Children. Deals with strategies for meeting the social and emotional needs of gifted children in the classroom. In particular, this course focuses on low-incidence gifted students, including underachievers, minorities and females. The course will not only cover particular curriculum and instruction strategies designed for this population and will emphasize strategies for teachers to be more facilitative in assisting these students to accept and realize their potential. Prerequisite: CI 467 or consent of instructor.

CI466 - Document Accomplished Teaching 466-3 Documenting Accomplished Teaching. This course will help teachers understand and gain requisite skills for participation in the National Board for Professional Teaching Standards (NBPTS) certification process. As part of learning to understand and document NBPTS standards, teachers will describe, analyze and reflect on drafts of written commentaries, videotapes of small and large group lessons, and student work.

CI467 - Methods & Materials Educ Gifted 467-3 Methods and Materials in the Education of the Gifted. Content focused on the most appropriate instructional strategies and materials to be utilized with the gifted. Time spent practicing teaching models, designing materials and developing teaching units. Emphasis placed on techniques for individualizing instruction for the gifted and talented students.

CI468 - Science Methods Mid & Sr HS 468-3 Science Methods for Middle and Senior High Schools. A performance-based approach to instructional skills common to teaching natural science at the middle and senior high school levels. Three class hours and one micro teaching laboratory hour per week.

CI469 - Tch Social Science in Sec Schl 469-3 Teaching Social Sciences in the Secondary School [6-12]. Emphasis is placed on the analysis and evaluation of the social sciences with focus on instructional strategies and curricular designs in the teaching of history, geography, political science, economics, and sociology, as well as content reading for the social sciences. Prerequisite: EDUC 313 or consent of instructor.

CI470 - NonFiction Adol-Adult 470-3 Teaching and Learning NonFiction Sources for Adolescent and Adult Learners. This course will help students develop instructional materials and curricular designs using non-fiction resources for classrooms at the secondary level and beyond. Students will also have an opportunity to gather, analyze, corroborate, and synthesize student data for the purposes of

planning instruction with an emphasis on informational sources such as written documents, images, and multimedia. Integrating technology for differentiating instruction, assessment, and content reading for the disciplines (with a specific focus on the social sciences) will also be emphasized. Prerequisite: CI 469 with a grade of C or better.

CI473 - Teaching in Middle Level Schls 473-3 Teaching in Middle Level Schools. Acquaints students with issues of teaching young adolescents and the role of teachers in connecting schools with community resources. Information from current area specialists and exemplary practitioners extend appropriate teaching strategies and supplement background knowledge on special topics related to social, emotional and physical development related to the curriculum. Prerequisite: CI 462, EDUC 313, or consent of instructor. Lab fee: \$10.

CI484 - Interactive Multimedia 484-3 Interactive Multimedia for Learning. An introduction to the evaluation, design, and development of interactive instructional multimedia programs. The instructional methods of Tutorial, Drill, Simulation, and Educational Games are covered. Projects include designing, developing, and use-testing an interactive instructional multimedia program. Lab fee: \$20.

CI487 - Web-based Apps for Teachers 487-3 Web-based Applications for Teachers and Instructors. Survey of trends and developments and laboratory instruction in the use of Web-based applications representative of those used by teachers, education specialists, or instruction in educational settings. An emphasis is placed upon developing skills used by teachers, education specialists, or instructors which enhance and facilitate the education processes within a Web-based learning environment. Laboratory fee: \$20.

CI493 - Writing: Research & Publicatn 493-3 Writing for Research and Publication. The course covers the current American Psychological Association (APA) guidelines (required by the Curriculum and Instruction department for all writing, including theses and dissertations) for reporting and writing reports, annotated bibliographies, and reviews of literature. Participants will read, critique, write, and present four short (5-10 pages each) scholarly research results and/or scholarly reviews of literature. The course will emphasize professional vocabulary, format, and writing style. Participants will write final, detailed and thorough literature reviews using APA format and style in their fields of study. This course has been recommended by the CI Graduate Faculty for all CI graduate students, especially those who are early in their programs. Instructor approval required for undergraduates.

CI495 - Internship C & F Services 495-6 Internship in Child and Family Services. Supervised work experiences in settings for children and families and/or public agencies. Prerequisites: CI 217, 227, 318A, 318B, 327, 337, 395, 404, 405A, and 405B with grades of C or better. Special approval needed from the instructor.

CI496 - Field Study Abroad 496-2 to 6 (2 to 4 per semester) Field Study Abroad. Orientation and study before travel, readings, reports, and planned travel. Includes visits to cultural and educational institutions. Maximum credit hours in any term are 4.

CI498A - Workshops - Curriculum 498A-1 to 15 (1 to 3 per topic) Workshops in Education-Curriculum. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498B - Workshops-Supervision 498B-1 to 15 (1 to 3 per topic) Workshops in Education-Supervision for Instructional Improvement. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498C - Workshops-Language Arts 498C-1 to 15 (1 to 3 per topic) Workshops in Education-Language Arts. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498D - Workshops - Science 498D-1 to 15 (1 to 3 per topic) Workshops in Education-Science. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498E - Workshops - Mathematics 498E-1 to 15 (1 to 3 per topic) Workshops in Education-Mathematics. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498F - Workshops - Reading 498F-1 to 15 (1 to 3 per topic) Workshops in Education-Reading. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498G - Workshops-Social Studies 498G-1 to 15 (1 to 3 per topic) Workshops in Education-Social Studies. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498H - Workshops-Early Childhood Educ 498H-1 to 15 (1 to 3 per topic) Workshops in Education-Early Childhood Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498I - Workshops-Elementary Educ 498I-1 to 15 (1 to 3 per topic) Workshops in Education-Elementary Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498J - Workshops-Middle School 498J-1 to 15 (1 to 3 per topic) Workshops in Education-The Middle School. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498K - Workshops-Secondary Educ 498K-1 to 15 (1 to 3 per topic) Workshops in Education-Secondary Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498M - Workshops-Instruction 498M-1 to 15 (1 to 3 per topic) Workshops in Education-Instruction. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498N - Workshops-Education Technology 498N-1 to 15 (1 to 3 per topic) Workshops in Education-Educational Technology. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498O - Workshops-Environmental Educ 498O-1 to 15 (1 to 3 per topic) Workshops in Education-Environmental Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498P - Workshops-Children's Lit 498P-1 to 15 (1 to 3 per topic) Workshops in Education-Children's Literature. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498Q - Workshops-Family Studies 498Q-1 to 15 (1 to 3 per topic) Workshops in Education-Family Studies. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498S - Workshops-Gifted & Talented Ed 498S-1 to 15 (1 to 3 per topic) Workshops in Education-Gifted and Talented Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI498T - Workshops-Teacher Education 498T-1 to 15 (1 to 3 per topic) Workshops in Education-Teacher Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices. Maximum of six hours toward a master's degree. Special approval needed from the instructor.

CI500 - Intro Research Methods in Educ 500-3 Introduction to Research Methods in Education. The student will evaluate and synthesize research, demonstrate a basic understanding of research concepts and principles, and compare and contrast specific methods for conducting research.

CI501 - Improve School Reading Prog 501-3 Improving School Reading Programs. For teachers, reading specialists, instructional leaders. Current issues, trends, practices in improving school reading programs at all levels. Special emphasis on school based management, teachers as change agents, curriculum evaluation, staff development and roles of school personnel. Participants assess existing programs and develop improvement plans. Prerequisite: CI 512, CI 513 or CI 561.

CI502 - Child Maltreatment 502-3 Child Maltreatment. Examines the many facets of child maltreatment including the impact on the child's development, the family dynamics and the communities' role. Emphasis is on current research in the field, as well as the roles and responsibilities of various professionals who work with children and their families.

CI503 - Intro to the Curriculum 503-3 Introduction to the Curriculum. Deals with the nature, purposes and functions of curriculum planning and development; curriculum design and organization; curriculum implementation and maintenance; and curriculum evaluation as each component relates to the total curriculum.

CI504 - System Approach to Instruction 504-3 Systematic Approaches to Instruction. Gives graduate students an opportunity to investigate, discuss and apply systematic approaches to instruction. Special emphasis is given to that element of the instructional system, that allows for the integration of instructional media into the process.

CI505 - Infant/Toddler Development 505-3 Infant/Toddler Development. This course is designed to be an overview of theoretical and research-based understandings of infant development. Principles of development as well as dynamics of human behavior and relations will be explored. A topical approach is taken to allow the understanding of how broad concepts of development apply to infant development.

CI506 - Prof Svcs Diverse Family Strct 506-3 Professional Services for Diverse Family Structures. Case analysis of different family structures through seminar teams. Each team will be responsible for analysis of the interaction of the family structure and the economic, nutritional, and socializing activities carried out within the family-household. Role and sources of assistance through current programs will be included. Special approval needed from the instructor.

CI507 - Impact Public Policy Fam Life 507-3 The Impact of Public Policy on Family Life. This course focuses on an analysis of policies that impact the lives of children and families and includes an overview of the legislative process at the local, state, and national levels. The course emphasizes practical ways in which we can become proactive and effective advocates for children and their families.

CI508 - Syst Observatn & Analy Instr 508-3 Systematic Observation and Analysis of Instruction. Students will learn to use conferencing techniques and to construct and use valid and reliable systematic observation instruments to provide the basis for analysis and feedback about classroom instruction.

CI509 - Found of Environment Educ 509-3 Foundations of Environmental Education. Designed specifically to provide teachers, administrators and curriculum specialists with the knowledge and skills necessary to implement environmental education strategies in both elementary and middle schools. Includes work in ecological foundations, programs currently in use, unit designs, methods and research. One or two field trips may be required.

CI512 - Reading in the Elemen School 512-3 Reading in the Elementary School. First course in the reading sequence. Survey of the reading process. Introduction to factors affecting the reading process, the common core of skills, teaching strategies, materials and research.

CI513 - Emergent Literacy 513-3 Emergent Literacy. A study of early literacy. Explores the foundations of family literacy as the basis for continued development of reading and writing in kindergarten and the primary grades.

CI514 - Advanced Child Development 514-3 Advanced Child Development. Major theories of child development as a framework for understanding of the contexts of development for young children will be examined. Emphasis will be on current research and issues in child development and implications for practice.

CI515 - Adv Remediation in Math 515-3 Advanced Remediation in Mathematics. Strategies for the design of prescribed systematic instruction for correcting identified mathematics difficulties. Experience in designing and preparing materials for corrective purposes. Prerequisite: CI 407E or consent of instructor.

CI516 - Teach Math in Elemen School 516-3 Teaching Mathematics in the Elementary School. Master's degree level course, which acquaints the student with approaches to teaching, development of curriculum materials and authoritative positions on the mathematics of grades K-8. Emphasis on teaching aids, problem solving and recent developments at this level.

CI517 - Early Child: Org & Admin 517-3 Early Childhood Programs: Organization and Administration. Presents an overview of the organization and administration of programs for children ages three to eight with experiences in planning for operating and administering such programs. Prerequisite: CI 518 or consent of instructor.

CI518 - Critical Issues in EC 518-3 Critical Issues in Early Childhood. A survey of current problems and practices in early childhood education for children from three to eight years of age, with emphasis on reading in current research literature. Special approval needed from the instructor.

CI520 - Action Research in EC 520-3 Action Research in Early Childhood. (Same as CI 544) Major trends and current issues in research as they relate to child development and early childhood programs will be explored. Special emphasis will be placed on the relationship of research to professional preparation and practice. Restricted to early childhood students who have taken all core courses for completion of the master's degree. Letter grade/DEF.

CI521 - Adv Diag Teaching Reading 521-4 Advanced Diagnostic Teaching of Reading. Emphasizes diagnostic teaching strategies that teachers and reading specialists employ when dealing with under achievement in reading. Students use informal and formal tests, observation and trial lessons to select instructional materials and activities appropriate to different reading/writing problems. Each student tutors

persons while being supervised in the Clinical Center. Prerequisite: CI 512 or CI 513 or CI 561, CI 407F. Special approval needed from the instructor.

CI522 - Technology in Math & Science 522-3 Integration of Technology in Mathematics and Science Teaching. Integrating technology in Math and Science teaching. Technology may include calculators, computer software, computer-based laboratories, data collection devices, interactive manipulatives, and other internet resources. Special approval needed from the instructor.

CI523 - Language Arts in Elem School 523-3 Language Arts in the Elementary School. The practical bearing of investigation and theory on the improvement of current practices in the teaching of the language arts other than reading. Attention given to evaluation of teaching materials in these areas. Prerequisite: CI 423 or consent of instructor.

CI524 - Elem Soc Sci Methods 524-3 Methods for Teaching Social Sciences in the Elementary School [Pre-K-6]. A study of theory and practices of teaching and developing programs in elementary school social sciences. Particular attention to be given to trends and issues in social sciences. Various social science models will be examined and evaluated for practical use. Students must demonstrate competencies and skills related to content reading for the social sciences.

CI525 - Integrate Technology Math Educ 525-3 Integration of Technology into Mathematics Education [PreK-8]. Technology use in mathematics teaching and learning, such as handheld calculators/computers; hands-on experience in teaching with easily learned tools for teaching/learning mental computation, computation, algebra, geometry, probability, statistics and use of software - e.g., Shapemakers, Geometer's Sketchpad, Excel, graphing calculators, computer-based laboratories, data collection devices, interactive websites and other internet resources.

CI526 - Probs in Elemen Science Educ 526-3 Problems in Elementary School Science Education. Emphasis upon identifying problems and trends within elementary school science education and planning for research in this field. Prerequisite: CI 426.

CI527 - Advanced Family Studies 527-3 Advanced Family Studies. Examination of the major theoretical approaches and current research in family development. Review the nature and value of theory to the study of the family and evaluate the use of theory in empirical research. Implications for policy.

CI528 - Method Tch Math Presch & (K-3) 528-3 Methods for Teaching Mathematics in the Preschool and Early Childhood Grades (Pre K-3). Acquaints the student with the learning characteristics of children and teaching methods at grades pre K-3. Emphasis on concrete manipulative teaching aids, learning readiness and diagnosis of learning difficulties.

CI529 - Modern Appr Tch Sec Sch Math 529-3 Modern Approaches to Teaching Secondary School Mathematics. (Same as MATH 511) Topics will include problem solving, applications of mathematics and teaching proofs in secondary school mathematics. Practical classroom use of materials will also be emphasized. Special approval needed from the instructor.

CI530 - Teach Prob Solv Sch Math (K-8) 530-3 Teaching Problem Solving in School Mathematics (Grades K-8). Designed to acquaint teachers with problem solving processes and how to integrate problem solving into their teaching. Emphasis is placed on teaching the process of problem solving. Restricted to graduate standing or consent of adviser.

CI531 - Curr Elem & Mid Level Schools 531-3 Curriculum for Elementary & Middle Level Schools. Designed to assist teachers and administrators in making curricular decisions for elementary and middle level schools based on knowledge of educational foundations, standards, learning experiences, research, materials and methods, instructional programming and evaluation.

CI533 - Instructional Leadership 533-3 Instructional Leadership. A study of research and related literature concerning the roles and responsibilities of various instructional leaders in public and private schools, professional development centers, state departments of education and college or university settings. Leadership styles and behaviors, especially as they apply to the academic circumstances and environments in specific case studies, are examined.

CI534 - Organiztn of Elementary School 534-3 Organization of the Elementary School. An analysis of types of elementary school organizations with special attention to influence of school organization upon

the educational program. Application of research findings to selection and use of materials of instruction. Special consideration to classroom teachers' professional problems.

CI535 - Reading Lang Arts Research Sem 535-3 Reading and Language Arts Research Seminar. Students survey current research in Reading and Language studies and present a research paper to the seminar participants. Prerequisite: CI 500, nine hours coursework in reading and language arts. Special approval needed from the instructor.

CI536 - PartnershipMentor New Profesnl 536-3 Partnerships and Mentoring the New Professional. A study of the theories, practices and research of Professional Development Schools and other collaborative teacher education and school reform initiatives with special attention given to the issues of collaboration and cooperation, team building and consensus building, honoring diversity and change, and educators as problem solvers.

CI537 - Issues in Math Education 537-3 Current Issues in Mathematics Education. This course provides graduate students with opportunities to study, discuss, and critically analyze issues and research in mathematics education. Students will become familiar with the major problems and issues facing mathematics educators at all school levels. Examination of recent mathematics education literature will be included as students gain an overall perspective on the discipline of mathematics education.

CI538 - Research in Math Education 538-3 Research in Mathematics Education. This course provides graduate students with opportunities to study, discuss, and make critical analyses of recent mathematics education literature and issues in the USA and other countries. Students will gain a better perspective on NCTM Standards and their relationship to research as they develop a detailed lesson plan in mathematics and conduct both a literature review and a data analysis report in mathematics education. Prerequisite: CI 537.

CI539 - Math Science Leadership 539-3 Leadership in Mathematics and Science. An exploration of current literature in math and science leadership and the application of principles and skills necessary for mentoring instructional development in math and science. Special approval needed from the instructor.

CI540 - Learning Models for Inst 540-3 Learning Models for Instructional Design. Surveys models of learning as they apply to the fields of Instructional Design and Instructional Technology. Models ranging from behaviorism to constructivism are covered along with theories concerning cognitive development and motivation. Theories are applied to analyzing instructional situations.

CI541 - Foundations of IDT 541-3 Foundations of Instructional Design and Technology. This course provides students with an overview of the issues related to instructional (systems) design and technology. Historical perspectives, current practice, emerging trends, and future development in the field. Appropriate use of digital technologies (procedures) for learning and training will be discussed.

CI542 - Mid Level Content Literacy 542-3 Literacy in the Middle Grades. This course focuses on the developmental literacy continuum of adolescents in the middle grades. There is a strong emphasis on language and literacy demands with the content areas, needs of culturally and linguistically diverse adolescent learners, and teaching reading and writing in the middle grades. Exploration of multiple venues for valuing and encouraging new literacy practices within middle level classroom contexts. Prerequisites: CI 512 or CI 513, other foundational literacy course, or consent of instructor.

CI543 - Fund Teaching Learning 543-5 Fundamentals of Teaching and Learning. First course in the Master of Arts in Teaching (M.A.T.) program sequence. Its focus is on development of a specific set of planning skills secondary level teachers need to appropriately design, implement, manage, and assess student learning. The course is offered annually during spring intersession only. Special approval needed from the instructor.

CI544 - Action Research Methods 544-3 Action Research Methods. (Same as CI 520) The focus of the course is on learning about action research, learning to develop and use various data collection tools, developing an action research question, learning about and using various data analysis tools, developing a report, and presenting a research report to an audience of colleagues and peers. Prerequisite: CI 543 (required for MAT students) or consent of instructor. Letter grade/DEF.

CI545 - Tch Literacy Diverse Students 545-3 Literacy Instruction for Culturally and Linguistically Diverse Students. This course introduces students to issues related to first- and second-language development, language variation, cultural diversity, second-language instruction, English as a Second Language (ESL) and bilingual education, and culturally and linguistically responsive instruction. These topics will be explored in terms of student learning and teaching and prepare students to teach English language learners (ELLs), dialect speakers, and students from diverse cultural and linguistic backgrounds. The course will serve as an examination of contemporary language acquisition theory; overview of ELL reading research; exploration of methods for motivating and sheltering instruction for ELLs; and investigation of the impact of federal policies on the types of experiences ELLs are afforded. The course is required for students working toward the reading specialist endorsement.

CI546 - Family & Community Literacies 546-3 Family and Community Literacies and Involvement. This course provides students with the knowledge and skills needed to work successfully with families and parent groups in individual, group, school and community settings. A socio-cultural perspective is evident as the focus will be on acknowledging and valuing the multiple literacies within families and communities, and strengthening adult-child relationships and parent-staff relationships in home, school, and community settings. An awareness of strategies in developing positive and supportive relationships with families of children, including the social, cultural, educational, health, economic, and political dimensions of community and family life, philosophical basis for family participation, family-centered services, and strategies for working with socially, culturally, and linguistically diverse families will be included. Prerequisite: CI 545.

CI547 - Adult Literacy 547-3 Instructional Strategies and Curriculum Development for Adult Literacy and Education. This course focuses on understanding adult learners and related practices in diverse adult educational and community contexts. It provides a philosophical, historical, and practical framework for adult literacy learning to include a critical analysis of policies, programs, practices and assumptions about adult learners that undergird the field of adult education. The course is taught through a sociocultural lens with an emphasis on instructional practices that are relevant to the lives and literacies of adult learners.

CI548 - Sci Ed Research Investigate 548-3 Science Education Research Investigations. This course involves the study of special problems and related research associated with practical educational situations in science education or related fields. The main objective is to provide doctoral students with opportunities to develop research skills in science education by conducting research projects on science education topics. Designed to help students learn the basics of research but not a research methods course.

CI549 - New Literacies & Technologies 549-3 New Literacies & Emerging Technologies in a Participatory Culture. This course explores the changing landscape of reading and writing as emerging technologies place new demands, challenges, and opportunities before readers and writers. Drawing from a socio-cultural perspective, this course aims to deepen students' understandings of the reading and writing processes with written, hyper, and multi-modal texts as well as strategies for supporting students' development in these processes. Particular emphasis will be on acknowledging and valuing the multiple literacies evident within families, communities, and contemporary society, and strengthening understanding of how best to support learners as they enact new literacy practices that rely upon emerging technologies. Techniques for incorporating new technologies into teaching, as well as the legal and ethical challenges for both teachers and students, will be examined. Prerequisite: CI 512, CI 513, or CI 561.

CI550 - Language Development 550-3 Language Development in Young Children. Language and communicative development of young children is the focus of this course. Students will learn about both typical and atypical language development in the areas of phonology, syntax, morphology, semantics, and pragmatics. The relationship between language and other areas of development will be explored as will ways to support language development in young children. Students will observe, record, analyze samples of young children's communication.

CI551 - Assess Virtual Environments 551-3 Assessment and Learning Using Virtual Environments. This course covers the foundations and trends in the research literature regarding the use of game, simulated and virtual environments for online learning and assessments. Issues and implications of these environments for instructional delivery, decision-making analysis of users and performance assessment methodologies are included.

CI552 - Sem Lang, Literacies, Culture 552-3 Seminar in Language, Literacies, and Culture. This seminar focuses on influential readings considered foundational to the study of language, literacies and culture. Students will identify a list of influential readings and participate in intensive reading, reflection, and discussion of them.

CI553 - Consulting in LSDT 553-3 Consulting in Learning Systems Design and Technology. This course applies current research and technology to the solution of instructional problems in higher education and corporate training environments. The student is guided through the systematic process of identifying instructional and performance problems, specifying learning objectives, analyzing tasks and learners, organizing resources, specifying methods and media, and assessing outcomes. Special approval needed from the instructor.

CI554 - Utilization Educational Media 554-3 Utilization of Educational Media. The utilization of print and non-print materials in instructional implementation and curriculum development. Structured for teachers, media directors, administrators and instructional designers. The increasing role of technological advances in education is stressed as those advances relate to learning theory and curriculum development.

CI555 - Instructional Message Design 555-3 Instructional Message Design. Emphasizes the use of cognitive theory and research-based principles for creating effective instructional text, pictures, and graphics. Topics include principles of perception, memory, concept, procedure, and principle learning, mental models, problem-solving, motivation and attitude change. A review of research issues in the study of instructional media and message design is included.

CI556 - Virtual & Simulated Learning 556-3 Virtual and Simulated Learning. (Same as CI 401) This course focuses on the design of interactive and virtual simulated environments (such as serious game, simulation, and virtual reality) and for the delivery of learning, training, and instruction. The design process includes gamification, analysis, and deconstruction of job tasks into measurable learning objectives and events for performance assessment and improvement.

CI557 - Task Analysis and ID 557-3 Task Analysis and Systematic Design of Instruction. Builds competence in applying the most current task and content analysis techniques used to make explicit the components of complex human performances and knowledge. Includes learning hierarchy analysis, information processing analysis, path analysis, job task analysis, skills analysis, fault tree analysis, concept analysis, knowledge engineering, matrix analysis, and pattern noting. Prerequisite: CI 504 or consent of instructor.

CI558 - Instruct Development Studio 558-3 Instructional Development Studio. The "Studio" environment provides students with the opportunity to learn and use authoring systems, languages and product development tools to design, develop, and produce online resources for learning and instruction. Participants will showcase learning artifacts created using a variety of commercial productivity tools and creativity suites. Prerequisite: CI 541.

CI559 - Adv Instruct Dev Studio 559-3 Advanced Instructional Development Studio. The advanced instructional development studio environment provides students who have taken the basic development studio course with further opportunities to design, develop, and produce online learning courses for learning, training, and instruction. Participants will showcase learning artifacts created using a variety of commercial authoring tools and creativity suites. Prerequisite: CI 558.

CI560 - Content & Learning Mgm Sys 560-3 Content and Learning Management Systems for e-Learning. The course covers the design and development of Content and Learning Management Systems (CMS/LMS) for the management and online delivery of learning resources in education, business and other training settings. Emphasis will be placed on the rapid development and management of e-Learning systems using CMS/LMS development tools and Web 2.0 technologies.

CI561 - Literacy Inst for Sec & Adult 561-3 Disciplinary and Content Area Literacy Instruction for Secondary and Adult Education. This course is for secondary teachers and others who desire strategies to help students learn from texts. Special emphasis is on how to help students improve their ability to comprehend, study, and use texts and other print materials encountered in secondary schools and the workplace. This course focuses on theory, research, and methods to enable student engagement with texts, particularly content texts. Emphasis is on strategies for teaching vocabulary, comprehension,

reasoning, and organization in specialty subject areas at the high school level, and fundamentally promotes differentiated instruction for diverse populations and the incorporation of technology.

CI562 - Social & Informal Learning 562-3 Social and Informal Learning. Covers games, simulations, role-playing, discussion forums, and social networking as informal modes of learning in both education and training contexts. Both face-to-face and online aspects of social and informal learning are considered.

CI563 - Inst & Human Performance 563-3 Instructional and Human Performance Technology. For those persons interested in the role that learning systems and instructional design and technology play in the field of human performance technology. Emphasis is upon performance problem identification, the distinction between skill/knowledge deficits and other performance problems, and the rationale for instructional solutions as well as electronic performance support systems, feedback and incentives, certification and other HP technologies.

CI564 - Curr Developmnt Gifted Students 564-3 Curriculum Development for Gifted Students. Explorations of the knowledge and decision-making required to develop curriculum for gifted students, including philosophy, goals and objectives; designing and sequencing activities; curriculum models for gifted students; evaluation and modification of curriculum. Emphasis is placed on the development of curriculum to be used in schools for gifted students.

CI566 - Instruct Strats for Prob Solve 566-3 Instructional Strategies for Problem Solving. The focus is on developing those teaching strategies, which will foster and enhance problem solving skills and heuristic thinking. Representative of these teaching skills would be inductive and deductive approaches, discovery and inquiry techniques, and questioning strategies.

CI567 - Children's Lit Seminar 567-3 Seminar in Children's Literature. The focus of this course is the role of literature in literacy development. Emphasis on methods that support children as they learn to read using literature as a medium of instruction and interpretation that enriches and extends the curriculum. Prerequisite: CI 512, CI 513, CI 561, other foundational course, or consent of instructor.

CI568 - Multicultural Lit Child/Adol 568-3 Literature for Children and Young Adults in a Multicultural Society. This course is designed to guide educators in the development of a framework from which they examine the impact of cultural, linguistic, and ethnic diversity in literature. As such, emphasis is placed on the development of a critical lens that embraces culturally sustaining practices for groups that have been traditionally underrepresented and inauthentically portrayed in texts. Entails introspection, examinations of bias, power, and privilege, and evaluation of texts. Prerequisite: CI 512 or CI 513 or CI 561, or consent of instructor.

CI570 - NonFiction Adolescent-Adult 570-3 Teaching and Learning NonFiction Sources for Adolescent and Adult Learners. This graduate-level course will help students develop instructional materials and curricular designs using non-fiction resources for classrooms at the secondary level and beyond. Students will also have an opportunity to gather, analyze, corroborate, and synthesize student data for the purposes of planning instruction with an emphasis on informational sources such as written documents, images, and multimedia. Integrating technology for differentiating instruction, assessment, and content reading for the disciplines (with a specific focus on the social sciences) will also be emphasized.

CI571 - Secondary School Curric 571-3 Secondary School Curriculum. An introductory course designed to explore the nature and development of the curriculum at the secondary school level. Historical perspective and foundations of curriculum are examined. Functional applications to the public secondary schools are emphasized.

CI572 - Instruct/Assess w/Sources 572-3 Instruction and Assessment with Primary Sources. In this course, students will have opportunities to create classroom assessments with artifacts and informational sources, analyze pupil data to inform instruction, learn ways to differentiate instruction to support critical thinking skills, develop local history and place-based curriculum, and participate in local field-based learning.

CI573 - Perspectives on Future & Schls 573-3 Perspectives on the Future and Its Schools. Deals with the future development of education and social trends, which will influence that development. Emphasis is placed upon alternative models of education and their social bases.

CI574 - Advanced Teaching Methods 574-3 Advanced Teaching Methods. This course focuses on advanced instructional models and strategies designed to improve professional practice and student achievement. Teachers analyze teaching models and methods to examine the connections between theory and practice, vary instructional methods, and explore common applications of the models. Course goals center on developing instruction that enables teachers to differentiate instruction to meet the needs of diverse learners and engage students in learning content. The course is appropriate for teachers at all levels of education.

CI575 - Critic Issues Instrct Supervsn 575-3 Critical Issues in Instructional Supervision. Students will examine the history, nature and evolution of supervision for instructional improvement. Students will be introduced to concepts, theory and research findings from many fields of study that have implications for today's supervisory process. Supervisory assumptions and practices will be examined in light of current knowledge of teaching effectiveness.

CI576 - Criticl Issues in Teacher Educ 576-3 Critical Issues in Teacher Education. Students will examine critical issues, problems, and trends in teacher education. Emphasis is placed on strategies for clarifying the issues, solving the problems and examining the possible impact of the trends.

CI577 - Sem in Int'l Math Education 577-3 Seminar in International Mathematics in Education. Deals with goals, contents, teaching methods, teacher training, curriculum development and research literature on mathematics education at the international level. Restricted to graduate standing or consent of adviser.

CI578 - Adv Study of Math Educ 578-3 Advanced Study of Mathematics Education. Study of the practical and theoretical development of mathematics curricula and instruction, and viewing mathematics curricula and instruction from philosophical and psychological perspectives. Restricted to advanced graduate study or consent of adviser.

CI579 - Young Adult Literature 579-3 Classic and Contemporary Literature for Young Adults. This course includes an examination of landmark and contemporary literature for young adults. Students will critically evaluate young adult literature and the implications for classroom use. Emphasis will be placed on the use of young adult literature within the framework of current standards. Prerequisites: CI 512 or CI 513 or CI 561, another foundational literacy course, or consent of instructor.

CI580 - Current Trends in Education 580-3 Current Trends in Education. Trends, issues, problems in education related to the student, program, school organization, staff, material and media, the school building, and the process of innovation and change.

CI581 - Digital Video Production 581-3 Digital Video Production. Video has become an essential aspect of teaching, training, and communications. This course is an intensive workshop that provides a thorough understanding of video formats, video production, and video editing techniques. No previous experience with video production is required. Lab fee: \$20.

CI582 - Adv Research Methods in Educ 582-3 Advanced Research Methods in Education. The study and application of advanced skills used in planning, executing, reporting, and utilizing educational research. Students must have an approved Program of Study on file prior to enrolling. Prerequisite: EAHE 587 and EDUC 505.

CI583 - Inst Theory, Prin & Pract 583-3 Instructional Theory, Principles, and Practices. Presentation of conceptual formulations and skills concerning instructional theory and principles; foundations of instruction; instructional systems and models; delivery processes (logistics), systems, and maintenance of quality control; and evaluation of teachers and students.

CI584 - Curr Theory, Found & Prins 584-3 Curriculum Theory, Foundations, and Principles. The course will emphasize the study of the perspectives on curriculum theory that have guided the development of curriculum practice in the United States. Students will critically examine these perspectives and utilize them to develop and defend positions on contemporary curriculum issues.

CI585A - Topical Seminar-Curriculum 585A-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Curriculum. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585B - Topical Sem-Suprvsn Inst Imp 585B-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Supervision for instructional improvement. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585C - Topical Sem-Language Arts 585C-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Language arts. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585D - Topical Sem - Science 585D-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Science. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585E - Topical Sem-Mathematics 585E-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Mathematics. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585F - Topical Sem - Reading 585F-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Reading. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585G - Topical Sem-Social Studies 585G-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Social studies. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585H - Topic Sem-Early Child Educ 585H-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Early Childhood education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585I - Topical Sem-Elem Educ 585I-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Elementary education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585J - Topic Sem-Middle School 585J-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: The Middle school. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585K - Topical Sem-Secondary Educ 585K-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Secondary education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585M - Topical Sem-Instruction 585M-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Instruction. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585N - Topical Sem-Educatn Technlgy 585N-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Educational technology. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585O - Topical Sem-Environmntl Educ 585O-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Environmental education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585P - Topical Sem-Children's Lit 585P-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Children's literature. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585Q - Topical Sem-Family Studies 585Q-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Family studies. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585S - Topic Sem-Gifted & Talented Ed 585S-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Gifted and talented education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI585T - Topic Sem-Teacher Educ 585T-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: Teacher education. Maximum of six hours toward a Master's degree. Special approval needed from the instructor.

CI586 - Curriculum Design & Devlpmnt 586-3 Curriculum Design and Development. Presentations concerning educational planning and curricular decision-making relating to curriculum: aims, goals, and objectives; nature of knowledge, disciplines, and subjects; curriculum structures: sequence and scope; substantive structural models; content and activity selection, product analysis and production; evaluation; and curriculum modification and change.

CI587 - Eval Learning & Inst Programs 587-3 Evaluating Learning and Instructional Programs. The course emphasizes both the evaluation of individual learner performance and program evaluation in the interest of assessing curriculum and instruction effectiveness. The rationales and assumptions supporting criterion-referenced assessment are contrasted with those of norm-referenced assessment. Both qualitative and quantitative data collection strategies are included. Attention is also given to the construction of evaluation reports.

CI588 - Design of e-Learning 588-3 Design and Delivery of e-Learning. Investigates e-learning in both higher education and corporate training contexts. The course draws upon the tradition of distance education in covering the design, delivery, and evaluation of online and blended learning in higher education. The course also draws upon the tradition of computer-based training (CBT) in covering the design, delivery, and evaluation of web-delivered training in corporations and organizations.

CI589 - Director of Curr & Instr 589-3 The Work of the Director of Curriculum and Instruction. The role of the director of curriculum and instruction is the focus of this course. Such topics as the background, current status, and tasks and functions of the position are examined. Additionally, such broad areas of the director's role as needs assessment, program planning and evaluation, and in-service education planning are covered. Prerequisite: CI 586 or CI 587 or consent of instructor.

CI590A - Readings-Curriculum 590A-1 to 15 (1 to 3 per topic) Independent Readings-Curriculum. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590B - Readings-Supervision 590B-1 to 15 (1 to 3 per topic) Independent Readings-Supervision for Instructional Improvement. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590C - Readings-Language Arts 590C-1 to 15 (1 to 3 per topic) Independent Readings-Language Arts. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590D - Readings-Science 590D-1 to 15 (1 to 3 per topic) Independent Readings-Science. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590E - Readings-Mathematics 590E-1 to 15 (1 to 3 per topic) Independent Readings-Mathematics. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590F - Independent Readings: Reading 590F-1 to 15 (1 to 3 per topic) Independent Readings-Reading. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590G - Readings-Social Studies 590G-1 to 15 (1 to 3 per topic) Independent Readings-Social Studies. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590H - Readings-Early Child Ed 590H-1 to 15 (1 to 3 per topic) Independent Readings-Early Childhood. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590I - Readings-Elementary Education 590I-1 to 15 (1 to 3 per topic) Independent Readings-Elementary Education. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590J - Readings-Middle School 590J-1 to 15 (1 to 3 per topic) Independent Readings-Middle School. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590K - Readings-Secondary Education 590K-1 to 15 (1 to 3 per topic) Independent Readings-Secondary Education. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590M - Readings-Instruction 590M-1 to 15 (1 to 3 per topic) Independent Readings-Instruction. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590N - Readings-Education Technology 590N-1 to 15 (1 to 3 per topic) Independent Readings-Educational Technology. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590O - Reading-Environment Educ 590O-1 to 15 (1 to 3 per topic) Independent Readings-Environmental Education. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590P - Readings-Children's Lit 590P-1 to 15 (1 to 3 per topic) Independent Readings-Children's Literature. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590Q - Readings-Family Studies 590Q-1 to 15 (1 to 3 per topic) Independent Readings-Family Studies. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590S - Readings-Gifted & Talented Edu 590S-1 to 15 (1 to 3 per topic) Independent Readings-Gifted and Talented Education. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI590T - Readings - Teacher Education 590T-1 to 15 (1 to 3 per topic) Independent Readings-Teacher Education. Directed readings in literature and research. Maximum of four hours toward a Master's degree. Special approval needed from the instructor.

CI591 - Web Resources for Teachers 591-3 Web Resources for Teachers. Investigates use of the Internet in classroom instruction and for professional development. Focus is on the "4 Cs" of Internet use by teachers: Communication, Content, Collaboration, and Community.

CI592 - Mixed Methods in Educ Research 592-3 Mixed Methods in Educational Research. An examination of how to combine qualitative and quantitative research methods and to defend such studies with reference to the tenets of the underlying constructivist and post-positivistic research paradigms. The objective of the course is for students to design and defend a mixed methods educational research study. Prerequisite: EAHE 587 and EPSY 505 or consent of instructor.

CI593A - Research-Curriculum 593A-1 to 15 (1 to 3 per topic) Individual Research in Education-Curriculum. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593B - Research-Supervision 593B-1 to 15 (1 to 3 per topic) Individual Research in Education-Supervision for Instructional Improvement. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593C - Research-Language Arts 593C-1 to 15 (1 to 3 per topic) Individual Research in Education-Language Arts. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593D - Research-Science 593D-1 to 15 (1 to 3 per topic) Individual Research in Education-Science. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593E - Research-Mathematics 593E-1 to 15 (1 to 3 per topic) Individual Research in Education-Mathematics. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593F - Research - Reading 593F-1 to 15 (1 to 3 per topic) Individual Research in Education-Reading. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593G - Research-Social Studies 593G-1 to 15 (1 to 3 per topic) Individual Research in Education-Social Studies. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593H - Research-Early Childhood Ed 593H-1 to 15 (1 to 3 per topic) Individual Research in Education-Early Childhood. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593I - Research-Elementary Education 593I-1 to 15 (1 to 3 per topic) Individual Research in Education-Elementary Education. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593J - Research-Middle School 593J-1 to 15 (1 to 3 per topic) Individual Research in Education-Middle School. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593K - Research-Secondary Education 593K-1 to 15 (1 to 3 per topic) Individual Research in Education-Secondary Education. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593M - Research-Instruction 593M-1 to 15 (1 to 3 per topic) Individual Research in Education-Instruction. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593N - Research-Education Technology 593N-1 to 15 (1 to 3 per topic) Individual Research in Education-Educational Technology. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593O - Research-Environment Education 593O-1 to 15 (1 to 3 per topic) Individual Research in Education-Environmental Education. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593P - Research-Children's Lit 593P-1 to 15 (1 to 3 per topic) Individual Research in Education-Children's Literature. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593Q - Research-Family Studies 593Q-1 to 15 (1 to 3 per topic) Individual Research in Education-Family Studies. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593S - Research-Gifted & Talented Ed 593S-1 to 15 (1 to 3 per topic) Individual Research in Education-Gifted and Talented Education. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI593T - Research-Teacher Education 593T-1 to 15 (1 to 3 per topic) Individual Research in Education-Teacher Education. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff. Maximum of three hours counted toward a Master's degree. Special approval needed from the instructor.

CI594A - Practicum-Curriculum 594A-(2 to 9 per topic) Practicum-Curriculum. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594B - Practicum-Supervision 594B-(2 to 9 per topic) Practicum-Supervision for Instructional Improvement. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and

research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594C - Practicum-Language Arts 594C-(2 to 9 per topic) Practicum-Language Arts. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594D - Practicum-Science 594D-(2 to 9 per topic) Practicum-Science. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594E - Practicum-Mathematics 594E-(2 to 9 per topic) Practicum-Mathematics. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594F - Practicum-Reading 594F-(2 to 9 per topic) Practicum-Reading. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594G - Practicum-Social Studies 594G-(2 to 9 per topic) Practicum-Social Studies. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594H - Practicum-Early Childhood Ed 594H-(2 to 9 per topic) Practicum-Early Childhood. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594I - Practicum-Elementary Ed 594I-(2 to 9 per topic) Practicum-Elementary Education. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594J - Practicum-Middle School 594J-(2 to 9 per topic) Practicum-Middle School. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594K - Practicum-Secondary Educ 594K-(2 to 9 per topic) Practicum-Secondary Education. For Master's degree students: professional consultation, teaching demonstration, practical application of

advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594M - Practicum-Instruction 594M-(2 to 9 per topic) Practicum-Instruction. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594N - Practicum-Education Technology 594N-(2 to 9 per topic) Practicum-Educational Technology. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594O - Practicum-Environmental Ed 594O-(2 to 9 per topic) Practicum-Environmental Education. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594P - Practicum-Children's Lit 594P-(2 to 9 per topic) Practicum-Children's Literature. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594Q - Practicum-Family Studies 594Q-(2 to 9 per topic) Practicum-Family Studies. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594S - Practicum-Gifted & Talented Ed 594S-(2 to 9 per topic) Practicum-Gifted and Talented Education. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI594T - Practicum-Teacher Educ 594T-(2 to 9 per topic) Practicum-Teacher Education. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. A maximum of nine hours credit may be applied toward a Master's degree. Special approval needed from the instructor.

CI595A - Internship-Curriculum 595A-(2 to 8 per topic) Internship-Curriculum. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595B - Internship-Supervision 595B-(2 to 8 per topic) Internship-Supervision for Instructional Improvement. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595C - Internship-Language Arts 595C-(2 to 8 per topic) Internship-Language Arts. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595D - Internship-Science 595D-(2 to 8 per topic) Internship-Science. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595E - Internship-Mathematics 595E-(2 to 8 per topic) Internship-Mathematics. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595F - Internship-Reading 595F-(2 to 8 per topic) Internship-Reading. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595G - Internship-Social Studies 595G-(2 to 8 per topic) Internship-Social Studies. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595H - Internship-Early Childhood 595H-(2 to 8 per topic) Internship-Early Childhood. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595I - Internship-Elementary Educ 595I-(2 to 8 per topic) Internship-Elementary Education. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595J - Internship-Middle School 595J-(2 to 8 per topic) Internship-Middle School. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595K - Internship-Secondary Education 595K-(2 to 8 per topic) Internship-Secondary Education. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595M - Internship-Instruction 595M-(2 to 8 per topic) Internship-Instruction. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595N - Internship-Educational Tech 595N-(2 to 8 per topic) Internship-Educational Technology. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595O - Internship-Environmental Ed 595O-(2 to 8 per topic) Internship-Environmental Education. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595P - Internship-Children's Lit 595P-(2 to 8 per topic) Internship-Children's Literature. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595Q - Internship-Family Studies 595Q-(2 to 8 per topic) Internship-Family Studies. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595S - Internship-Gifted/Talented Edu 595S-(2 to 8 per topic) Internship-Gifted and Talented Education. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI595T - Internship-Teacher Educ 595T-(2 to 8 per topic) Internship-Teacher Education. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Special approval needed from the instructor.

CI597 - PBL for STEM Educators 597-1 to 3 Problem-Based Learning for STEM Educators. This course surveys the history and development of Problem-Based Learning (PBL) and its applications in Science, Technology, Engineering, and Mathematics (STEM) education and place-based education. Participants will discuss PBL principles and pedagogy and critique or create PBL modules with respect to national and state STEM education standards in support of K-12 classroom implementation, adaptation, assessment, and iterative design of PBL instruction or intervention.

CI599 - Thesis 599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree. Restricted to admission to Master's degree program.

CI600 - Dissertation 600-1 to 32 (1 to 16 per semester) Dissertation. Minimum of 24 hours for the Doctor of Philosophy degree.

CI601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

CI699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Curriculum and Instruction Faculty

Bacon, Heidi R., Assistant Professor, Ph.D., University of Arizona, 2014.
Bancroft, Senetta F., Assistant Professor, Ph.D., The University of Akron, 2014.
Becker, Jerry P., Professor, Ph.D., Stanford University, 1967.
Bedient, Douglas, Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1971.
Bluhm, William J., Lecturer, Emeritus, Ph.D., Southern Illinois University Carbondale, 1978.
Brown, Lisa, Instructor, M.Ed., Southern Illinois University, 1993.
Bu, Lingguo, Associate Professor, Ph.D., Florida State University, 2008.
Buser, Margaret, Assistant Professor, Emerita, M.S.Ed., Indiana University, 1966.
Byfield, Lavern, Assistant Professor, Ph.D., University of Illinois, 2012.
Campbell, James A., Associate Professor, Emeritus, Ph.D., Ohio State University, 1978.
Copenhaver, Ron W., Associate Professor, Emeritus, Ed.D., Indiana University, 1978.
Coscarelli, William, Professor, Emeritus, Ph.D., Indiana University, 1977.
Crossman, Kimberly A., Assistant Professor, Ph.D., University of Illinois 2015.
Dale, Doris C., Professor, Emerita, D.L.S., Columbia University, 1968.
Dixon, Billy G., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1967.
Eichholz, Barbara, Lecturer, Emerita, Ph.D., Southern Illinois University Carbondale, 1986.
Erickson, Lawrence, Professor, Emeritus, Ph.D., University of Wisconsin, 1972.
Fadde, Peter J., Professor, Ph.D., Purdue University, 2002.
Gilbert, Sharon, Associate Professor, Emerita, Ph.D., Ohio State University, 1988.
Garrett, Ann M., Senior Lecturer, M.Ed., Southern Illinois University, 1975.
Grace, Barbara E., Instructor, M.S., Southern Illinois University Carbondale, 1985.
Grounds, Elizabeth, Instructor, M.Ed., Southern Illinois University, 1995.
Henson, Harvey, Jr., Assistant Professor, Ph.D., Southern Illinois University, 2015.
Hungerford, Harold R., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1970.
Jackson, James, Associate Professor, Emeritus, Ph.D., University of Wisconsin, 1976.
Jackson, Michael, Associate Professor, Emeritus, Ed.D., University of Florida, 1971.
Johnson, Margaret, Lecturer, Emerita, Ph.D., Southern Illinois University, 1998.
Jones, Dan R., Associate Professor, Emeritus, Ed.D., Indiana University, 1978.
Karmos, Ann, Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1975.
Killian, Joyce E., Professor, Emerita, Ph.D., Pennsylvania State University, 1980.
Lamb, Morris L., Associate Professor, Emeritus, Ed.D., University of Oklahoma, 1970.
Lin, Cheng-Yao, Professor, Ph.D., University of Illinois, 2003.
Loh, Sebastian, Professor, Ph.D., University of Georgia, 2004.
Matthias, Margaret, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1972.
McIntyre, Christina, Associate Professor, Ph.D., Georgia State University, 2007.
McIntyre, D. John, Professor, Emeritus, Ed.D., Syracuse University, 1977.
Miller, Grant, Associate Professor, Ph.D., Boston College, 2007.
Mogharreban, Catherine N., Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1990.
Nelson, JoAnn, Assistant Professor, Emerita, Ph.D., University of Illinois, 1980.
Norris, William, Associate Professor, Emeritus, Ed.D., Indiana University, 1973.
Pearlman, Susan F., Associate Professor, Emerita, Ph.D., University of Missouri, 1987.
Post, Donna M., Associate Professor, Emerita, Ph.D., Pennsylvania State University, 1990.
Pultorak, Edward, Jr., Professor, Ph.D., Indiana State University, 1988.
Shafer, Frances K., Senior Lecturer, Ph.D., Southern Illinois University, 2008.
Shelby-Caffey, Crystal V., Associate Professor, Ph.D., Southern Illinois University, 2008.
Shepherd, Terry R., Associate Professor, Emeritus, Ph.D., University of Illinois, 1971.
Shrock, Sharon A., Professor, Emerita, Ph.D., Indiana University, 1979.
Smith, Lynn C., Associate Professor, Emerita, Ph.D., University of Georgia, 1984.
Solliday, Michael, Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1975.
Stearns, Louise, Lecturer, M.Ed., Southern Illinois University, 1985.
Thompson, Stacy D., Associate Professor, Ph.D., Iowa State University, 1998.
Viernow, Melissa R., Lecturer, M.Ed., Southern Illinois University Carbondale, 1999.

Volk, Gertrude L., Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1983.
Waggoner, Jan, Associate Professor, Emerita, Ed.D., Memphis State University, 1990.
Walton, Cheryl, Instructor, M.Ed., Southern Illinois University, 1995.
Wise, Kevin C., Professor, Emeritus, Ed.D., University of Georgia, 1983.
Zobairi, Nillofur, Lecturer, Emerita, Ph.D., Southern Illinois University, 1993.

Dental Hygiene

The program leading to a baccalaureate degree in dental hygiene is designed to prepare the graduate to successfully enter the oral health profession of dental hygiene in any one of the six designated roles of the dental hygienist as defined by the American Dental Hygienists' Association: clinician, educator, entrepreneur, and corporate researcher. In addition, the graduates are prepared to continue their education in graduate or professional programs. The curriculum is designed to assist students in the development of knowledge, skills, attitudes and values that will enable them to adapt to a complex and changing health care delivery system. Special emphasis is placed on the development of skills related to periodontal disease, skills and attitudes to meet the needs of the geriatric population, and access to care for those persons unable to attain care, especially the underserved rural segment of the population. A minimum grade of C for all dental hygiene courses is required to maintain enrollment in the Dental Hygiene professional sequence. Dental hygiene courses typically are taught one time in an academic year. A student who fails to meet the minimum grade requirements for each DH course (or drops out of the dental hygiene sequence) will be removed from the DH program and must reapply for admission.

Dental hygiene is a licensed profession. In order to meet licensure requirements, the student must graduate from an accredited program and successfully pass a written National Board Dental Hygiene Examination, as well as the appropriate State/Regional (Clinical) Board Examination.

Admission requirements to the applicant pool are the same as those to the University. Once accepted into the University, the student must submit a separate application to the Dental Hygiene program. In order to be considered for admission into the professional sequence, you must be accepted into Southern Illinois University Carbondale and have completed a minimum of 29 semester hours of college credit. These hours must include the following courses or approved substitutions: ENGL 101, ENGL 102, MATH 108, PSYC 102, SOC 108, MICR 201, AH 105, AH 241 and CHEM 106. Prospective students may complete the University Core Curriculum and the basic science courses at other colleges or universities as well as at SIU. Thirty-six students begin the professional sequence in the fall semester. In addition to textbooks and tuition, other expenses are required to cover the cost of instruments, uniforms and other professional supplies. Contact the Dental Hygiene program for specifics.

The Dental Hygiene program offers an on-site clinic to provide the student with practical clinical instruction. Students perform dental hygiene services in the clinic under the direct supervision of dental hygiene faculty composed of licensed dental hygienists and licensed dentists. Students also are involved in the provision of care and education through a variety of community projects. An advisory committee composed of representatives from community dental practices, dental education and dental industry serves the program.

The program also is designed to serve as a degree completion program for dental hygienists who have completed an associate degree in dental hygiene from any accredited dental hygiene program. The Capstone Option is available to students who have obtained an Associate in Applied Science with a 2.0 (4.0 scale) or higher GPA.

The Dental Hygiene program has a Linkage Agreement with Southeastern Illinois College, Kaskaskia College and Shawnee College. If you have questions about this agreement, contact the community college advisor or SIU School of Allied Health at 618/453-7211.

The program in Dental Hygiene is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Commission on Recognition of Post-secondary Accreditation and by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (800) 621-8099 or 440-2500 at 211 East Chicago Avenue, Chicago, IL 60611.

Bachelor of Science in Dental Hygiene, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
University Core Curriculum - including CHEM 106, MATH 108, MICR 201, PSYC 102, SOC 108, HND 101. ¹	41
Requirements for Major in Dental Hygiene - including: DH 200, DH 206, DH 206L, DH 207, DH 207C, DH 210, DH 210C, DH 212, DH 218, DH 218L, DH 219, DH 219L, DH 220, DH 220C, DH 226, DH 233, DH 247, DH 247L, DH 320, DH 320C, DH 322, DH 322L, DH 340, DH 341, DH 347, DH 349, DH 355, DH 355C, DH 401, DH 401L, DH 410, DH 417, DH 440, DH 441, and DH 441C.	79
Total	120

¹ These courses are required for a major in dental hygiene and are approved substitutions for the University Core Curriculum requirements in science. The additional hours will be included in the total hours required for the degree.

Education and Management Option

This option is designed to allow dental hygienists with an associate degree the opportunity to study educational theories, philosophies, styles, and techniques. Additionally, the student will be introduced to management concepts as they relate to health care. The primary focus of the education and management option is to allow students who wish to enter either dental hygiene education or management the opportunity to learn and develop the skills necessary for success in these two environments. Students will be required to complete an internship in their chosen area of emphasis (if state licensure is feasible) or an undergraduate research project related to dental hygiene education or management.

Education and Management: Nine of the following courses must be taken: DH 345, DH 355, DH 411, DH 425A, DH 425B, DH 435, DH 480, DH 481, DH 482, in addition to one of the following courses: DH 475 or DH 476.

Dental Hygiene Courses

DH200 - Orientation-Dental Hygiene 200-2 Orientation to Dental Hygiene. The student will be introduced to the dental hygiene profession. Issues including patients' rights, professional ethics, the state practice act, health promotion, and communication will be presented. Learning styles, test-taking strategies, research applications, using resources, and writing styles will be included. Restricted to DH majors.

DH206 - Oral Anatomy/Tooth Morphology 206-1 Oral Anatomy and Tooth Morphology. The student will learn to recognize and identify the structures within the oral cavity. These include the tongue, salivary glands, lips and cheeks and teeth (both permanent and primary). Length of course: 16 weeks, one hour of lecture weekly. Concurrent enrollment in DH 206L. Restricted to DH majors only and approval from the School of Allied Health.

DH206L - Oral Anatomy Lab 206L-1 Oral Anatomy and Tooth Morphology Lab. The student will learn to recognize and identify the structures within the oral cavity, including the tongue, salivary glands, lips and cheeks and teeth (both permanent and primary). Laboratory emphasis will be placed on tooth identification and tooth/root morphology to enhance the application of instrumentation techniques. Length of course: 16 weeks, two hours of lab weekly. Concurrent enrollment in DH 206. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH207 - Pre-Clinic 207-2 Pre-Clinic. DH 207 is the lecture portion of the pre-clinical course which introduces the student to fundamentals of dental hygiene theory, foundational instrumentation techniques, infection control protocol, and clinical policies. Two hours of lecture weekly. Length of course: 16 weeks. Taken concurrently with DH 207C. Must be accepted into professional sequence. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH207C - Pre-Clinic Instrumentation 207C-2 Pre-Clinic Instrumentation. DH 207C is a pre-clinical course which introduces the student to hands-on experiences with the fundamentals of dental hygiene theory, foundational instrumentation techniques, infection control protocol, and clinical policies. Students must demonstrate clinical competence with various skills involving classmates, typodonts, clinical equipment, and clinical policies. Four hours of lab weekly. Length of course: 16 weeks. Taken concurrently with DH 207 lecture. Must be accepted into professional sequence. Restricted to DH majors only and approval from the School of Allied Health or the DH program. The sophomore cohort entering the professional sequence for dental hygiene are required to have specific instruments and supplies upon starting their first clinical semester. The instruments are used throughout the dental hygiene program beginning the sophomore year through graduation. This program fee of \$1,700 is applied upon registration in DH 207C.

DH210 - Patient Assessment Techniques 210-2 Patient Assessment Techniques. Patient assessment theories and techniques are taught to prepare the student to successfully recognize and record normal and abnormal intraoral and extraoral conditions. These assessment skills will be incorporated into treatment planning for individualized patient care. Lecture two hours. Length: 16 weeks. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH210C - Assessment 210C-1 Patient Assessment Pre-Clinic. Patient assessment theories and techniques are taught to prepare the student to successfully recognize and record normal and abnormal intraoral and extraoral conditions. Clinic two hours. Length: 16 weeks. Concurrent enrollment required in DH 207, DH 207C and DH 210. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH212 - Med Emerg & General Diseases 212-2 Medical Emergencies in the Dental Office and General Diseases. The student will learn about medical conditions which may affect or alter the provision of oral care. Emphasis is on acquiring and evaluating the medical, dental and drug history and treatment of general system diseases. Modification of treatment plans will be discussed. Lecture two hours, sixteen weeks. Prerequisite: Microbiology 201.

DH218 - Dental Hygiene Radiology I 218-2 Dental Hygiene Radiology I. The student is introduced to principles of radiation biology and protection, x-ray production, image formation, and intraoral radiographic techniques. Lecture two hours. Length of course: 16 weeks. Concurrent enrollment in DH 218L. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH218L - Dent Hyg Rad I Practicum 218L-1 Dental Hygiene Radiology I Practicum. The student is introduced to principles of radiation biology and protection, x-ray production, image formation, and intraoral radiographic techniques. Lab two hours. Length of course: 16 weeks. Concurrent enrollment in DH 218. Restricted to DH majors only and approval from the School of Allied Health or the DH program. Lab fee: \$35.

DH219 - Dental Hygiene Radiology II 219-2 Dental Hygiene Radiology II. The student will learn special dental survey techniques including paralleling, bisecting angle, digital, occlusal and special views. The student will also identify anatomical landmarks and recognize normal and pathological conditions that appear on dental images. Lecture two hours. Course length: 16 weeks. Prerequisites: DH 218, DH 218L and DH 226 with grades of C or better. Concurrent enrollment in DH 219L. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH219L - Den Hyg Rad II Practicum 219L-1 Dental Hygiene Radiology II Practicum. The student will learn special dental survey techniques including paralleling, bisecting angle, digital, occlusal and special views. The student will also identify anatomical landmarks and recognize normal and pathological conditions that appear on dental images. Laboratory two hours. Course length: 16 weeks. Prerequisites: DH 218, DH 218L, and DH 226 with a minimum grade of C. Concurrent enrollment in DH 219. Restricted to DH majors only and approval from the School of Allied Health or the DH program. Lab fee: \$50.

DH220 - DH Concepts & Review 220-2 Dental Hygiene Concepts and Review. This course expands on theory and the clinical application of dental hygiene sciences. Includes introduction to dental hygiene clinic policies and procedures, professional conduct, patient assessment, clinical decision-making, treatment modalities, and care plan development. Emphasis is placed on the development of critical thinking skills as applied to the provision of patient care. Lecture two hours. Length of course: 16 weeks. Prerequisites: DH 206, DH 206L, DH 207, DH 207C, DH 210, DH 210C, DH 218, DH 218L, DH 226 with grades of C or better. Concurrent enrollment required in DH 219, DH 219L and DH 220C. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH220C - Dental Hygiene Clinic I 220C-2 Dental Hygiene Clinic I. The student will apply knowledge and utilize techniques to assess the oral health status, plan and implement treatment, and evaluate outcomes related to improved oral health. The student will provide preventive, therapeutic, and educational services to clinical patients for the treatment and prevention of oral disease. Clinic 8 hours. Prerequisites: DH 206, DH 206L, DH 207, DH 207C, DH 210, DH 218, DH 218L and DH 226 with grades of C or better. Restricted to DH majors only and approval from the School of Allied Health or the DH program. Laboratory fee: \$50.

DH226 - Anatomy of the Head & Neck 226-2 Anatomy of the Head and Neck. The goal of this course is for the dental hygiene student to acquire clinical problem solving skills through a basic understanding of the gross anatomy of the head and neck region of the human body. Through a regional approach to the head and neck, the student will be able to synthesize solutions to clinical problems by understanding the morphological and functional interrelationships of anatomical structures. 16 weeks. Two credit hours. Restricted to DH majors.

DH233 - Histology & Embryology 233-2 Histology and Embryology. The goal of this course is to enable the dental hygiene student to develop a basic understanding of the microscopic structure of the primary and dental tissue groups of the human body. This course also enables the student to relate embryonic development to the normal and abnormal structures of the head and oral cavity. This background will prepare the student to differentiate between normal and abnormal clinical manifestations in subsequent courses. 16 weeks. Two credit hours. Restricted to DH majors.

DH247 - Preventive Oral Care 247-2 Preventive Oral Care. The student will prepare for the role of oral health educator and consumer advocate. The dental hygiene process of assessment, planning, implementation and evaluation is applied for the prevention of oral disease. Each week in the 16-week course is two hours of lecture. Prerequisites: MICR 201, DH 210, DH 207, DH 207C, DH 226 with grades of C or better. Concurrent enrollment in DH 247L. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH247L - Preventive Oral Care Practicum 247L-1 Preventive Oral Care Practicum. The student will prepare for the role of oral health educator and consumer advocate. The dental hygiene process of assessment, planning, implementation and evaluation is applied for the prevention of oral disease. Laboratory techniques for assessing disease processes will be applied. Two hours of laboratory per week. Length of course: 16 weeks. Prerequisites: MICR 201, DH 207, DH 207C, DH 210, DH 226 with grades of C or better. Concurrent enrollment in DH 247. Restricted to DH majors only and approval from the School of Allied Health or the DH program. Lab fee: \$35.

DH298 - Multicultural Appl Experience 298-3 Multicultural Applied Experience. An applied experience, service-oriented course in American diversity involving a group different from the student who elects the course. Difference can be manifested by things such as age, gender, ethnicity, nationality, political affiliation, race, or class. Satisfies the multicultural requirement in the University Core Curriculum.

DH299 - Individual Study 299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to resources of the facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Restricted to DH majors.

DH320 - Treat Plan Nutrition Review 320-2 Treatment Planning, Nutrition and Review. Students will use research, discussions, and professional judgment to provide comprehensive dental hygiene treatment. This course will introduce power instrumentation techniques, patient management, professionalism, tobacco cessation, and nutritional counseling. It will also prepare the dental hygiene student for safe and effective administration of topical and local anesthesia. Additional applications of patient management

software will also be introduced. Lecture: two hours. Length: 16 weeks. Must be taken concurrently with DH 320C, DH 340, and DH 341. Prerequisites: DH 219, DH 219L, DH 220, DH 220C with grades of C or better.

DH320C - Dental Hygiene Clinic II 320C-3 Dental Hygiene Clinic II. This is the third course in a series of clinical courses that lead to the achievement of integrated objectives for clinical dental hygiene practice. The student is expected to continue to develop progressively in the application of clinical skills in order to provide preventive, nutritional, educational, and therapeutic services to the public. Information from basic sciences, dental science, and the behavioral sciences will be utilized to provide individualized client/patient care. The student will perform professional services of a dental hygienist on designated clinical clients/patients and is expected to demonstrate improvement of skills. The course will also provide a working knowledge of local anesthesia as applied to the practice of dental hygiene. Students will be provided with the knowledge and skills necessary to administer both maxillary (infiltration) and mandibular (block) injections proficiently and safely. Clinic: 8 hours. Length: 16 weeks. Must be taken concurrently with DH 320, DH 340, DH 341. Prerequisites: DH 219, DH 219L, DH 220, DH 220C with grades of C or better. Instrument fee: \$456.

DH322 - Dental Materials 322-1 Dental Materials. This course includes an overview of various materials and procedures used in operative, endodontic, orthodontic and prosthetic dentistry. Emphasis is placed on the role of dental hygienists in explaining these procedures to clients/patients and in adapting dental hygiene services. One hour of lecture. Length: 16 weeks. Prerequisites: DH 320, DH 320C with grades of C or better. Concurrent enrollment in DH 322L required. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH322L - Dental Materials Lab 322L-1 Dental Materials Lab. Adjunctive procedures that augment operative care are taught in this laboratory. Two hours of lab. Length: 16 weeks. Prerequisites: DH 320, DH 320C with grades of C or better. Concurrent enrollment in DH 322 required. Restricted to DH majors only and approval from the School of Allied Health or the DH program. Laboratory fee: \$50.

DH340 - Dental Pharmacology 340-3 Dental Pharmacology & Pain Control. This course is designed to teach the student about different drugs used in dentistry, the biochemical activity of each, and appropriate use, interactions with other drugs or systemic conditions, and some basic pharmacology terminology. Pharmacotherapeutics will be presented to the dental hygiene student in a meaningful, practical manner. Emphasis will be placed on clinical efforts, dosages, adverse effects and contraindications of drugs commonly prescribed in dentistry or which patients may be taking under direction of other health care providers or under self-direction. Information will be presented from a perspective including the pharmacological basis for drugs, the need for and use of a medical history and legal aspects related to these subjects. Prerequisites: DH 212, DH 220, DH 220C with grades of C or better. Corequisites: DH 320, DH 320C, DH 341.

DH341 - Periodontics 341-2 Periodontics. The student will be introduced to identification, treatment, and prevention of pathological conditions that affect the periodontium. Includes assessment, diagnosis, and initial treatment of periodontal diseases. Emphasis will be placed on anatomy and histology of normal periodontal tissues, etiology of periodontal diseases and resulting tissue changes. Lecture 2 hours. Length of course: 16 weeks. Prerequisites: DH 212, DH 220, DH 220C, and DH 226 with grades of C or better, and concurrent enrollment in DH 320, DH 320C and DH 340 required.

DH345 - Intro to DH Management 345-3 Introduction to Dental Hygiene Management. (Same as RAD 345) This course focuses on the unique management issues involved in dental hygiene and dental offices. These problems include federal and state laws unique to dentistry and dental hygiene, and medical-legal issues of patient care. Best practices of practice management will be explored as applied to settings such as corporate dentistry, federally qualified health centers, government agencies, and privately owned dental practices. 16 weeks.

DH347 - Community Oral Health 347-3 Community Oral Health. The student is introduced to the general principles of dental public health and community oral health and these principles will be applied through practical experiences. Programming phases of assessment, dental hygiene diagnosis, planning, implementation, evaluation and documentation are studied in detail. Lecture three hours. Length: 16 weeks. Prerequisites: DH 247, DH 247L with grades of C or better. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH349 - Oral Pathology 349-3 Oral Pathology. This course has been designed to integrate the knowledge of general and oral pathology into clinical care. Pathologic physiology, including tissue regeneration, the inflammatory process, immunology and wound healing will be emphasized. Special attention will be placed on common pathological conditions of the oral cavity and early recognition of these conditions. Lecture 3 hours, sixteen weeks. Prerequisites: DH 210, DH 212, DH 226, and DH 233 with grades of C or better. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH355 - Treat Plan & Review II 355-2 Treatment Planning and Review II. This course will emphasize nutritional counseling, implant maintenance, CDT codes. Continued focus on anesthesia, case studies and patient management. Students will be introduced to criteria for board patient selection. Two hour lecture. Length: 16 weeks. Must be taken concurrently with DH 355C. Prerequisites: DH 320, DH 320C, DH 340, DH 341 with grades of C or better. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH355C - Dental Hygiene Clinic III 355C-3 Dental Hygiene Clinic III. This is the third clinical course in a series that leads to the achievement of specific objectives for the clinical dental hygiene practice. The student will maintain and develop clinical skills, preventive care and provide dental education to each patient they encounter. This care will also include successful treatment modalities, dental hygiene care planning and continuous care in a recall system. The student will provide comprehensive individualized treatment using all aspects of dental hygiene care in the clinical setting. Emphasis is on mastery of skills and techniques previously introduced. Eight hours of clinic. Must be taken concurrently with DH 355. Prerequisites: DH 320, DH 320C, DH 340, DH 341 with minimum grades of C. Restricted to DH majors only and approval from the School of Allied Health or the DH program. Laboratory fee: \$75.

DH365 - Teaching Strategies DH 365-3 Teaching Strategies in Dental Hygiene. (Same as RAD 355) This course is designed to introduce the prospective dental hygiene educator to philosophies and strategies required to successfully instruct students in dental hygiene. Emphasis is on instruction and evaluation of didactic and clinical skills. Focus includes curriculum planning, curriculum development, curriculum implementation, curriculum evaluation, establishing and evaluating goals and objectives, and designing and delivering instruction for teaching psychomotor skills.

DH401 - DH Practicum 401-2 Dental Hygiene Practicum. The student will learn curriculum development, evaluation methods, theories of learning, and instructional strategies. Not for graduate credit. Lecture two hours, practicum four hours. Prerequisites: DH 355, DH 355C with grades of C or better. Concurrent enrollment in DH 441, DH 441C, DH 401L. Restricted to DH majors only and approval from the School of Allied Health.

DH401L - DH Practicum Lab 401L-2 Dental Hygiene Practicum Lab. The student will participate in laboratory and clinical sessions emphasizing psychomotor development, feedback, and identification of cognitive, psychomotor, and affective behaviors, and faculty calibration. Not for graduate credit. Practicum four hours. Prerequisite: DH 355, DH 355C with grades of C or better. Concurrent enrollment in DH 441, DH 441C, DH 401. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH410 - Ethics, Prac Mgmt & Comm 410-3 Ethics, Practice Management and Effective Communication. Ethical and legal issues related to the practice of dentistry and dental hygiene are studied. Case situations are evaluated to determine principles of dental ethics and jurisprudence. Review and interpretation of dental practice acts and licensure requirements are included. The student integrates current knowledge of the dental hygiene field with additional information on employment issues, such as dental office procedures, resumes, career opportunities and staff relationships incorporating effective communication skills. Lecture three hours. Length: 16 weeks. Prerequisites: DH 355, DH 355C with grades of C or better. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH411 - Research Methods 411-3 Research Methods. (Same as RAD 415) This course will introduce the student to the various mechanisms by which scholarly and professional research are conducted. These include quantitative and qualitative methodologies, historiographical, and a mixed methods approach. Prerequisite: DH 476.

DH413 - Dental Hygiene Seminar 413-2 Dental Hygiene Seminar. This course is designed to assist senior dental hygiene students in preparing for the credentialing examinations and the other procedures required for obtaining a dental hygiene license. Course content will include review of dental hygiene curriculum content and requirements for licensure. Prerequisites: DH 355, DH 355C with grades of C or better.

DH417 - Multicultural/Geriatrics/IPC 417-3 Multicultural/Geriatrics/IPC (Advanced University Core Curriculum course) A comprehensive approach to special needs patients and diverse populations. Emphasis will be placed on an interdisciplinary collaborative care model intended to provide a comprehensive approach to oral healthcare. The oral health needs of rural, geriatric, minority, low-income, medically compromised, disabled and other special needs populations will be addressed. Lecture three hours. 16 weeks. Concurrent enrollment in DH 401, DH 401L, DH 441, DH 441C required. Prerequisite: DH 355 and DH 355C with grades of C or better. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH417I - Multicultural Internship 417I-1 to 3 Multicultural Internship. Rotations through several clinical facilities providing dental hygiene services to a variety of patient population groups. Twelve internship hours. Not for graduate credit. Prerequisites: DH 355, DH 355C, with grades of C or better. Concurrent enrollment in DH 417. Restricted to DH majors only and approval from the School of Allied Health or the DH program. Laboratory fee: \$50.

DH425A - Readings in DH Education 425A-3 Readings in Dental Hygiene Education. (Same as RAD 425A) The purpose of this course is to identify problems/issues within Dental Hygiene Education and Management and to present viable solutions to those problems/issues. Utilizing scholarly research and correlative research from other fields, the student will engage in integrated problem solving. This is an independent study course, conducted under the direction of a faculty member, and is a writing intensive course.

DH425B - Readings in DH Management 425B-3 Readings in Dental Hygiene Management. (Same as RAD 425B) The purpose of this course is to identify problems/issues within Dental Hygiene Education and Management and to present viable solutions to those problems/issues. Utilizing scholarly research and correlative research from other fields, the student will engage in integrated problem solving. This is an independent study course, conducted under the direction of a faculty member, and is a writing intensive course.

DH435 - Problems in DH Educ & Mgmt 435-3 Problems in Dental Hygiene Education and Management. (Same as RAD 435) The purpose of this course is to identify problems/issues within Dental Hygiene Education and Management and to present viable solutions to those problems/issues. Utilizing scholarly research and correlative research from other fields, the student will engage in integrated problem solving. This is an independent study course, conducted under the direction of a faculty member, and is a writing intensive course.

DH440 - Research Methods 440-3 Research Methods and Interpretation. This course introduces the fundamental principles of scientific inquiry, research methodology and basic statistical analysis needed to critically assess health research and determine potential clinical application. The student will learn the process of evidence-based decision making, research principles and design, and the critical analysis of research articles culminating in the creation of a critical review article and poster. Not for graduate credit. Restricted to Dental Hygiene majors.

DH441 - Advanced Periodontics 441-3 Advanced Periodontics. Didactic instruction will emphasize clinical application of patient management skills including comprehensive individualized treatment for complex periodontal patients. Emphasis will be placed on comprehensive evaluation, risk assessment, treatment planning, pain control, adjunctive antibiotic therapy, instrumentation, soft tissue management, evaluation and maintenance. Lecture three hours. Not for graduate credit. Prerequisites: DH 355, DH 355C with grades of C or better. Concurrent enrollment in DH 441C, DH 401, DH 401L. Restricted to DH majors only and approval from the School of Allied Health or the DH program.

DH441C - Dental Hygiene Clinic IV 441C-3 Dental Hygiene Clinic IV. The student will provide comprehensive individualized treatment for complex periodontal patients. Emphasis will be placed on clinical application of patient management skills including comprehensive evaluation, risk assessment, treatment planning, pain control, adjunctive antibiotic therapy, instrumentation, soft tissue management,

evaluation and maintenance. Clinic twelve hours. Not for graduate credit. Prerequisites: DH 355, DH 355C with grades of C or better. Concurrent enrollment in DH 441, DH 401, DH 401L. Restricted to DH majors only and approval from the School of Allied Health or the DH program. Laboratory fee: \$75.

DH450C - Advanced Periodontics Clinic V 450C-3 Advanced Periodontics Clinic V. This is the fifth and final clinical course in the clinical series. The student will provide comprehensive individualized treatment for complex periodontal patients. Emphasis will be placed on clinical application of patient management skills including comprehensive evaluation, risk assessment, treatment planning, pain control, adjunctive antibiotic therapy, instrumentation, soft tissue management, evaluation and maintenance. Clinic four hours. Not for graduate credit. Concurrent enrollment in DH 401, DH 401L and DH 441 required. Prerequisites: DH 441 and DH 441C with grades of C or better. Restricted to DH majors only and approval from the School of Allied Health or the DH program. Clinic fee: \$125.

DH476 - Research Project 476-4 Research Project. (Same as RAD 476) This course requires the selection and investigation of a research topic culminating in a paper to satisfy the research requirement for the Bachelor of Science degree in Dental Hygiene. Must have U.S. R.D.H. credentials. Prerequisite: DH 411. Restricted to SAH major/minor or with consent of SAH Academic Advisor.

DH480 - The U.S. Health Care System 480-3 The U.S. Health Care System. (Same as HCM 360, RAD 480) This course is a study of the major components which comprise the U.S. health care system. This course will focus primarily on basic terminology, history, settings, personnel, access to care, types of care, utilization of services, vulnerable populations and future challenges for the delivery of health care services. Students will closely review clinical aspects and terminologies as they relate to medical conditions, medical equipment, and medical procedures for the purposes of interacting successfully with health care administrators, physicians/providers of care, and patients. This is a labor intensive course requiring extensive out-of-class study.

DH481 - Org Behavior Health Care Orgs 481-3 Organizational Behavior in Health Care Organizations. (Same as HCM 364, RAD 481) This course is an evaluation of relationships in healthcare organizations. Study of the motivational factors of those focused on patient care vs. those focused on profits and how to modify behaviors to achieve proper balance. Environmental factors of the healthcare field are evaluated for their impact on the behavior and employee-management relations of healthcare professionals and patient care providers. Promotes effective planning and organizing within the complex and highly regulated healthcare industry and assures alignment of organizational goals with the missions/visions/values as related to quality of patient life and organizational success. Restricted to SAH major/minor or with consent of SAH Academic Advisor.

DH482 - Legal Aspects/Current Iss HC 482-3 Legal Aspects and Current Issues in Health Care. (Same as HCM 388, RAD 482) Principles of law and the U.S. legal system are applied, in part, through case study and an exploration of current events, in the areas of health care management. Legal issues include malpractice, contracts, corporate liability of health care organizations, liability by health care professionals, and patient rights, along with a specific focus on legal aspects of managed care.

Dental Hygiene Faculty

Beebe, Sandra N., Clinical Instructor, RDH, Ph.D., Southern Illinois University Carbondale, 2003.

Chen, Angela M., Clinical Assistant Professor, DDS, University of California, 1993.

Davis, Joan Mary, Professor, Ph.D., Southern Illinois University Carbondale, 2010.

DeMattei, Ronda, Associate Professor, Emerita, RDH, Ph.D., Southern Illinois University Carbondale, 2006.

File, Shelly A., Assistant Instructor, RDH, B.S., Southern Illinois University Carbondale, 2007.

Lautar, Charla, Professor, Emerita, RDH, Ph.D., University of Calgary, 1993.

Lukes, Sherri M., Associate Professor, Emerita, RDH, M.S.Ed., Southern Illinois University Carbondale, 1991.

McKinney, Stacey, Assistant Instructor, RDH, B.S., Southern Illinois University Carbondale, 2010.

McSherry, Teri S., Senior Lecturer, RDH, M.S.W., Southern Illinois University Carbondale, 2008.

Meyer, Jennifer M., Assistant Instructor, RDH, B.S., Southern Illinois University Carbondale, 1999.

Miller, Faith, Associate Professor, M.S., Southern Illinois University Carbondale, 1999.

Pfister, Regina L., Assistant Professor, Emerita, RDH, M.S.Ed., Southern Illinois University Carbondale, 2002.
Schuster, Rositta L., RDH, B.S., Kaplan University, 2011.
Sherry, Jennifer S., Associate Professor, RDH, M.S.Ed., Southern Illinois University Carbondale, 2004.
Tiebout, Leigh, Assistant Professor, Emerita, CDT, M.S., Southern Illinois University, 1989.
Torphy, Colleen, Senior Lecturer, RDH, B.S., Southern Illinois University Carbondale, 1999.
Winings, John R., Associate Professor, Emeritus, CDT, M.A., Governors State University, 1972.
Wyatt, Amy, M., Clinical Assistant Professor, D.M.D., Southern Illinois University School of Dental Medicine Alton, 2006.

Educational Administration

Educational Administration Courses

EAHE256 - Student Strengths 256-1 to 3 Student Strengths and Goal Setting. This course provides students with an opportunity to identify their strengths and then use this information to set academic, career, and life goals. The design of this course devotes special consideration to the needs of First Scholars participants, first-generation college students, and others who desire some support in finding direction for their lives and their time in college.

EAHE402 - Prin Stu Person Grp Work 402-1 to 3 Principles of Student Personnel Group Work. Acquaints the student with group work possibilities and functions in higher education.

EAHE470 - College Student Sexuality 470-3 College Student Sexuality. (Same as WGSS 470) Seminar designed to provide students with a strong grounding in the field of college student sexuality and sexual identity, covering the lived experiences of U.S. college students, the construction of sexualized collegiate identities through U.S. history, and how institutions of higher education have attempted to regulate, control, and (intentionally as well as inadvertently) effect college student sexuality.

EAHE500 - Educ Research Methods 500-3 Educational Research Methods. Introduction to educational research and the variant methodologies used in conducting studies within institutional settings. Both quantitative and qualitative approaches will be examined.

EAHE501 - Vision/Planning Sch Improve 501-3 Vision and Planning for School Improvement. In this graduate level course, school professionals will be introduced to the role and functions of the school principal as defined in federal, state, and local statutes. It will also address the variations of that role based on school level (Pre-K, elementary, middle, and high school). Professionals will be able to define and conceptualize what it means to be an instructional leader and the notion of distributed leadership. Professionals will gain an understanding of the needs of all students (ELL/bilingual; special needs, other). Professionals will understand how literacy and numeracy instruction impacts student learning and how student performance data informs the school vision and plans for school improvement.

EAHE503 - Collaborative Structures 503-3 Building Collaborative Structures and Systems of Professional Practice. In this graduate level course, school professionals will focus on structures that allow engagement between educators on issues of practice (i.e., professional learning communities, communities of practice) as a means for leaders to support the development of organizational goals, group and individual student, parent involvement, professional teaching/learning, and school success. School professionals will learn to track cohort data to determine the successes of groups and subgroups as a means to determine whether or not school culture is unified and cohesive. School professionals will apply theory to practice as they engage in decision-making activities involving school-wide change processes and monitoring effective instruction, expanding upon their awareness of the 2013 Illinois Professional Teaching Standards that foster a culture of student learning.

EAHE504 - Personnel Admin/Evaluation 504-3 School Leadership Through Personnel Administration and Evaluation. In this graduate level course, school professionals will acquire knowledge and skills

to become qualified evaluators of licensed teachers. School professionals will learn to collaborate using observation and conversation to provide feedback to change teaching practices. Techniques to collect, analyze, and accurately document objective data will be learned and practiced with the goal to acquire the skills to rate the professional/instructional performance of teachers and other licensed school personnel. Restrictions: Admitted to a PK-12 graduate program in COEHS.

EAHE505 - Adm & Superv Middle School 505-3 The Administration and Supervision of the Middle School. Reviews the philosophy of the middle school concept and emphasizes the role of the principal in the areas of management, supervision of human resources, program development, the direction of students and the concern for ethical standards of operation.

EAHE506 - Adm&Superv Sec School 506-3 The Administration and Supervision of the Secondary School. Deals with problems met specifically by the high school principal. Emphasizes the principal's role in relation to guidance, curriculum, schedule-making, extra-curricular activities, public relations, budgeting of time, etc.

EAHE508 - Student Development Theory 508-3 Student Development Theory. A study of the major theories of human development as applied to college students with implications for the student affairs specialist. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor.

EAHE509 - School-Community Relations 509-3 School Community Relations and District Policy. In this graduate level course, school professionals will learn to achieve the school's vision and obtain support for school improvement through effectively communicating and collaborating with the central office, faculty and staff, school families, and community members. School professionals will define community in terms of diversity, develop plans to build a cohesive school community, connect research with the professional context, engage in effective decision-making practices, and communicate results to constituents using appropriate written and verbal formats.

EAHE510 - Higher Ed in the U.S. 510-3 Higher Education in the United States. An overview of American higher education in historical and sociological perspectives: its development, scope, characteristics, issues, problems, trends and criticism. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor.

EAHE511 - Curriculum & Assessment 511-3 Leading Curriculum and Assessment. In this graduate level course, school professionals will learn to promote a shared vision of the elements of school and curriculum that make higher achievement possible, setting high expectations for all students to learn high-level content. Through this course, the school professional establishes effective curriculum delivery systems and utilizes leadership and facilitation skills to effectively manage curricular change. Additionally, the school professional promotes the success for all students by using data to initiate and continue improvement in school and classroom practices and increased student achievement. The school professional will accomplish these course goals by acquiring an understanding of the use of rigorous formative, interim, and summative assessments.

EAHE513 - Org & Admin in Higher Ed 513-3 Organization and Administration in Higher Education. Theories and practices in governance of various types of higher education institutions with attention to problems of formal and informal structures, personnel policies, decision making, institutional self-study and societal-governmental relations. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor.

EAHE514 - Case Studies in Higher Educ 514-3 Case Studies in Higher Education. This course is designed to allow graduate students studying to be administrators in higher education practice at analyzing problems and issues in postsecondary education, as well as problems and issues facing college students. Extended, semester-long case studies are utilized. Prerequisite: EAHE 508 or consent of instructor.

EAHE515 - Student Affairs Admin 515-3 Student Affairs Administration. Study of organization, functions, and under girding principles and policies of student development and the related student personnel services and programs in contemporary colleges and universities including community

colleges. Restricted to students admitted to master's degree or certificate in higher education or consent of instructor.

EAHE516 - College Students/Culture 516-3 College Students and College Culture. Study of the nature of students, the impact of the college on student development, and the nature of the college as a unique social institution. Study of student subcultures and the interaction between students, institutions, and communities. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor.

EAHE517 - Legal Framework of Education 517-3 The Legal Framework of Education. A study of administrative, judicial, statutory and constitutional laws which have application in American public schools.

EAHE518 - College Teaching 518-3 College Teaching. Emphasis is given to teaching and learning styles, the teaching-learning process, specific methods of teaching, strategies to improve teaching, resources available to the classroom teacher, and methods of evaluating teaching. Other topics will include: models of effective teaching behavior, academic freedom and due process. Course also open to teaching assistants from other departments.

EAHE519 - School Law & Educ Policy 519-3 School Law and Educational Policy. In this graduate level course, school principal candidates will become acquainted with fundamental legal issues that impact P-12 schools. The candidates will acquire knowledge to understand, respond to, and influence the larger political, legal, social, economic, and cultural context while making ethical decisions, promoting democratic values and building equitable and just learning communities.

EAHE520 - Curr Issues in Educ Admin 520-1 to 6 Current Issues in Educational Administration. An examination of current issues that affect the various administrative levels in educational systems. The issue(s) selected receives intensive treatment and review. This class is offered specifically for those seeking the superintendent's endorsement.

EAHE521 - Leadership for Equity-SP 521-3 Leadership for Equity: Special Populations. In this graduate level course, school professionals will learn the role of educational leadership in promoting and supporting educational equity as a critical dimension of democracy, social justice, and related legal aspects. They will consider the moral/ethical, contextual, communal, dialogic, and transformative dimensions of school leadership that support the development of an equitable school environment, with particular emphasis on special programming for students with disabilities, economically disadvantaged, homeless, gifted, early childhood, English-language learners, and racial/ethnic minority students.

EAHE523 - Effective School Management 523-3 Effective Management and Operations: Finance, Facilities, Technology & Grants. In this graduate level course, school professionals will acquire skills for successful school management of finances, facilities, technology and grants. The course covers vital aspects of managing fiscal, human, and material resources that facilitate student learning, safety and support curriculum and instruction. Restricted to admission to a PK-12 graduate program in COEHS.

EAHE524 - Curriculum Design/Policy 524-3 Curriculum Design and Policy. A study of assumptions, materials, methods and evaluation in the designs of various curricula in colleges and universities, with attention to curriculum resources and policy.

EAHE525 - Equity Diversity Higher Ed 525-3 Equity and Diversity in Higher Education. This course is designed to educate students in two ways: by broadening understanding and deepening readings into diverse higher education populations and issues, and by applying those understandings and readings to their practices as postsecondary administrators and educators.

EAHE526 - The Community College 526-3 The Community College. A study of the characteristics and functions of the community or junior college in American higher education. Course content aids the student in developing a general understanding of the philosophy, objectives, organization, and operations of this significant institution.

EAHE528 - Finance in Higher Education 528-3 Finance in Higher Education. A study of financing higher education in American society and related economic aspects. Emphasis is given to sources of funds and management of financing in colleges and universities including budgeting, control,

accountability and current trends. Restricted to students admitted to master's degree or certificate in higher education, or consent of instructor.

EAHE530 - Historical Research: Educ 530-3 Historical Research in Education. Seminar designed to explore the literature, methods and possibilities of historical research in education.

EAHE535A - Sem I: Studt Org/Act Adv 535A-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Student organization and activities advising.

EAHE535B - Sem I: Law & Higher Education 535B-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Law and higher education.

EAHE535C - Sem I: Student Fin Assist 535C-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Student financial assistance.

EAHE535D - Sem I: Admissions & Records 535D-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Admissions and records.

EAHE535E - Sem I: Acad & Faculty Admin 535E-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Academic and faculty administration.

EAHE535F - Sem I: Cur Iss/Student Affairs 535F-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Current issues in student affairs.

EAHE535G - Sem I: Housing Administration 535G-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Housing administration.

EAHE535H - Sem I: Non-Trad Students 535H-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Non-traditional students.

EAHE535I - Sem: Gender in Higher Ed 535I-1 to 14 (1 to 3 each) Higher Education Seminar I. (Same as WGSS 535) A series of seminars for specialized study of areas of administrative practice and policy. Gender in higher education.

EAHE535J - Sem I: Student Union Admin 535J-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Student union administration.

EAHE535K - Sem I: Special Topics 535K-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Special topics.

EAHE535S - Sem I: Selected Topics 535S-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. Special Topics.

EAHE536 - Hist of Education in U.S. 536-3 History of Education in the United States. An historical study of the problems of American education.

EAHE537 - The Adult Learner 537-3 The Adult Learner. The focus of study will be adult learners, their motivations, learning styles, needs, goals, life stages, life cycles and developmental patterns. Implications for adult learning will be sought.

EAHE538 - Educ Policy & Social Forces 538-3 Education, Policy, and Social Forces. In this graduate level course, students will examine the foundations of educational policy and practice. Students will develop the ability to critically analyze historical and contemporary issues in American education by

exploring the social, political, economic, and cultural context of education. Students will be able to evaluate educational policies and practices in light of various assumptions, ideals, and values about public education. This knowledge will enable educators to understand the broader social and political forces that shape their educational community (i.e., students, faculty, and staff) and their roles as educational leaders.

EAHE542 - Contrast Philosophies Educ 542-3 Contrasting Philosophies of Education. An examination of current educational problems and trends in the light of contrasting philosophies of education.

EAHE543 - Collective Bargaining 543-3 Collective Bargaining. An investigation of theory as related to collective bargaining and professional negotiations. Course will emphasize various approaches to collective bargaining and the roles included in those processes. Course will also use cases and simulations to illustrate examples of collective bargaining processes.

EAHE544 - Education and Culture 544-3 Education and Culture. A study of the concept of culture and its relation to the process of education.

EAHE545A - Hghr Educ Sem II-CC Admin 545A-1 to 16 (A through J, 1 to 3 each) Higher Education Seminar II-Community College Administration. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE545B - Sem II:Fed Init in Hi Ed 545B-1 to 16 (1 to 3 each) Higher Education Seminar II-Federal Initiatives in Higher Education. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE545C - Sem II: Inst Policy Res 545C-1 to 16 (1 to 3 each) Higher Education Seminar II-Institutional Policy Research. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE545D - Sem II:Curr Issues Hi Ed 545D-1 to 16 (1 to 3 each) Higher Education Seminar II-Current Issues in Higher Education. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE545E - Sem II: Higher Ed Admin 545E-1 to 16 (1 to 3) Higher Education Seminar II-Higher Education Administration. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE545F - Sem II: Inst Finance & Admin 545F-1 to 16 (1 to 3) Higher Education Seminar II-Institutional Finance and Administration. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE545G - Sem II: History of Higher Ed 545G-1 to 16 (1 to 3) Higher Education Seminar II-History of Higher Education. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE545H - Sem II: Sociology Hi Ed 545H-1 to 16 (1 to 3) Higher Education Seminar II-Sociology of Higher Education. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE545J - Sem II: Adult & Continuing Ed 545J-1 to 16 (1 to 3) Higher Education Seminar II-Adult and Continuing Education. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE545S - Sem II: Selected Topics 545S-1 to 16 (1-8 each) Higher Education Seminar II-Selected Topics. A series of seminars for scholarly inquiry into significant aspects of higher education.

EAHE547 - Eval Educational Research 547-3 Evaluating Educational Research. The goal of this course is to develop student skills as consumers of research in education. Standards and practices in multiple traditions of educational research are reviewed in order to help students critically read, assess, and evaluate research. Restricted to master's degree and certificate in higher education, or consent of instructor.

EAHE548 - Inquiry of Prof Practice 548-3 Developing Professionals and the Inquiry of Professional Practice. In this graduate level course, school professionals learn to critically read, evaluate and apply

educational research so that they can engage their school systems in continuous inquiry to positively affect student achievement. School professionals will develop an action research project proposal designed to appropriately address a building-level issue. Students will learn to lead action research through the development of sound research design.

EAHE550 - School Business Admin 550-3 School Business Administration. A study of the principles and practices governing management of business affairs of a public school system. Included are such topics as revenues, expenditures, accounting, auditing, reporting and applications of electronic data processing as a management tool. Practical experience is given in using the Illinois financial accounting manual as well as other managerial procedures. Detailed study is made of the role of the school business administrator in the local school district.

EAHE551 - Policy & Politics in Ed 551-3 Policy and Politics in American Education Systems. An examination of the political setting of educational administration and a general study of public policy in the American educational system. This course is open to students in certification and doctoral programs only. In addition to educational leadership related to the politics and policy of education, emphasis is given to innovative and contemporary practices of school administration.

EAHE553 - Plan Processes & Policy Dev 553-3 Planning Processes and Policy Development. Surveys issues involved with accountability in education. Explores in some detail various planning models. Examines concepts and strategies in public policy development.

EAHE555 - Leadership & Change 555-3 Leadership and Change in Education Organizations. An advanced seminar devoted to the study of leadership and change in the administration of complex education organizations. Particular emphasis is placed on organizations as social units that pursue specific goals, which they are structured to serve. Leadership and change are examined in terms of how they can influence organizational goals, organizational structure and organizations and the social environment.

EAHE556 - Sch Supt & Board of Educ 556-3 The School Superintendent and Board of Education. Focuses on superintendent-school board relationships. It investigates the administrative team's role and functions as they relate to leadership in educational policy making.

EAHE557 - Program Dev & Evaluation 557-3 Program Development and Evaluation. This course is designed to enable an administrator to develop, implement, and evaluate a school or agency program from inception through final assessment. An emphasis will be placed upon formal and informal means of formative and summative processes utilizing evaluation diagnostics and instrumentation. Formalized accreditation standards and guidelines will also be examined.

EAHE558 - Personnel Eval and Admin 558-3 Personnel Evaluation and Administration. This course will provide the administrator with the concepts, strategies and assessment measures to evaluate and manage personnel in both simple and complex organizational settings.

EAHE564 - Sem Ethics Soc Justice in Educ 564-3 Seminar in Ethics and Social Justice in Education. The goals of this course are to provide educational leaders with a framework for understanding the dynamics of oppression, to offer tools for ethical decision making, and to increase awareness and responsibility toward social justice issues in education.

EAHE569 - School Operations Law 569-3 School Operations and the Law. This course presents information pertinent to understanding, interpreting, and applying appropriate law as a central office school administrator. A major emphasis concentrates on understanding basic principles of law in order to apply them at a school district-level. An emphasis focuses on interpreting current legislation for application purposes as a school administrator. Prerequisite: EAHE 519 or equivalent.

EAHE575 - Women in Higher Education 575-3 Women in Higher Education. (Same as WGSS 575) The goal of this course is to provide an overview of women in higher education. Topics that will be considered are: feminism's impact of women in higher education; the division of labor for women (including faculty and professional staff positions); historical and sociological perspectives of access to higher education including curriculum and pedagogy.

EAHE576 - College Men/Masculinities 576-3 College Men and Masculinities. (Same as WGSS 576)

This course is a readings-based seminar covering concepts of masculinity as demonstrated by collegiate men in the United States. The readings in this course cover cultural as well as identity elements of what being a "college man" means (and how that definition has changed over time and contexts). The readings consist of historical, contemporary and theoretical scholarship concerning collegiate masculinity.

EAHE587 - Intro to Qualitative Research 587-3 Introduction to Qualitative Research. This course introduces students to qualitative research in education. The course examines the foundations, design, methods and analysis of qualitative research. Course readings include both philosophical texts about the foundations and purposes of qualitative inquiry, and methodological readings about the hands-on application of research techniques.

EAHE588 - General Graduate Seminar 588-3 to 6 General Graduate Seminar. Selected topics or problems related to administration and leadership in education.

EAHE589 - Doctoral Research Seminar 589-1 to 3 Doctoral Research Seminar. Limited to doctoral students formulating and preparing research designs for investigation and implementation. Graded S/U only. Special approval needed from the instructor.

EAHE590A - Readings: Administration 590A-1 to 6 Readings. Advanced reading in one of the following areas-Administration. Special approval needed from the instructor. Graded S/U only.

EAHE590B - Readings: Buildings 590B-1 to 6 Readings. Advanced reading in one of the following areas-Buildings. Special approval needed from the instructor. Graded S/U only.

EAHE590C - Readings: Superv Curriculum 590C-1 to 6 Readings. Advanced reading in one of the following areas-Supervision of curriculum. Special approval needed from the instructor. Graded S/U only.

EAHE590D - Readings: Finance 590D-1 to 6 Readings. Advanced reading in one of the following areas-Finance. Special approval needed from the instructor. Graded S/U only.

EAHE590E - Readings: School Law 590E-1 to 6 Readings. Advanced reading in one of the following areas-School law. Special approval needed from the instructor. Graded S/U only.

EAHE590F - Readings: Supervision 590F-1 to 6 Readings. Advanced reading in one of the following areas-Supervision. Special approval needed from the instructor. Graded S/U only.

EAHE590G - Readings: Comparative Ed 590G-1 to 6 Readings. Advanced reading in one of the following areas-Comparative education. Special approval needed from the instructor. Graded S/U only.

EAHE590H - Readings: History of Ed 590H-1 to 6 Readings. Advanced reading in one of the following areas-History of education. Special approval needed from the instructor. Graded S/U only.

EAHE590I - Readings: Philosophy Ed 590I-1 to 6 Readings. Advanced reading in one of the following areas-Philosophy of education. Special approval needed from the instructor. Graded S/U only.

EAHE590J - Readings: Sociology Educ 590J-1 to 6 Readings. Advanced reading in one of the following areas-Sociology of education. Special approval needed from the instructor. Graded S/U only.

EAHE590K - Readings: Adult/Community Ed 590K-1 to 6 Readings. Advanced reading in one of the following areas-Adult and community education. Special approval needed from the instructor. Graded S/U only.

EAHE590L - Readings: Higher Education 590L-1 to 6 Readings. Advanced reading in one of the following areas-Higher education. Special approval needed from the instructor. Graded S/U only.

EAHE591 - Individual Study 591-1 to 6 Individual Study. Individual inquiry into selected problems or special topics in higher education under supervision of a graduate faculty member. Graded S/U only. Special approval needed from the instructor.

EAHE593A - Ind Res: Administration 593A-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal

supervision of a graduate faculty member in administration. Graded S/U only. Special approval needed from the instructor.

EAHE593B - Ind Res: Buildings 593B-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in buildings. Graded S/U only. Special approval needed from the instructor.

EAHE593C - Indiv Res: Superv/Curriculum 593C-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in supervision of curriculum. Graded S/U only. Special approval needed from the instructor.

EAHE593D - Indiv Research: Finance 593D-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in finance. Graded S/U only. Special approval needed from the instructor.

EAHE593E - Indiv Research: School Law 593E-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in school law. Graded S/U only. Special approval needed from the instructor.

EAHE593F - Indiv Res: Supervision 593F-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in supervision. Graded S/U only. Special approval needed from the instructor.

EAHE593G - Indiv Res: Comparative Ed 593G-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in comparative education. Graded S/U only. Special approval needed from the instructor.

EAHE593H - Ind Res: History of Education 593H-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in history of education. Graded S/U only. Special approval needed from the instructor.

EAHE593I - Ind Res: Philosophy Educ 593I-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in philosophy of education. Graded S/U only. Special approval needed from the instructor.

EAHE593J - Ind Res: Sociology Educ 593J-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in sociology of education. Graded S/U only. Special approval needed from the instructor.

EAHE593K - Ind Res: Adult/Community Educ 593K-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in adult and community education. Graded S/U only. Special approval needed from the instructor.

EAHE593L - Ind Res: Higher Education 593L-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal supervision of a graduate faculty member in higher education. Graded S/U only. Special approval needed from the instructor.

EAHE594 - Advanced Qualitative Research 594-3 Advanced Qualitative Research. This course is a doctoral-level seminar in qualitative research. The course builds on EAHE 587, "Introduction to Qualitative Research," by focusing on the design and implementation of an independent qualitative research project. As such, this course emphasizes research design, conceptualization and analysis.

Course readings review some of the foundations of qualitative inquiry, and include texts that focus on research design and modes of qualitative analysis. Prerequisite: EAHE 587.

EAHE595 - Principal Internship 595-2 to 6 Principal Internship. The School Principal Internship is a sustained, continuous, structured, and supervised learning opportunity for practicing principals (interns) to observe firsthand the role and function of the school principal. The internship takes place within 12 months during which students complete a total of 6 credit hours.

EAHE597 - Superintendent Internship 597-1 to 6 Superintendent Internship. An internship conducted in a central administrative setting for fulfillment of the state of Illinois' Level III Administrative Certificate. Special approval needed from student's adviser.

EAHE598 - Higher Education Internship 598-1 to 6 Higher Education Internship. The internship provides an opportunity for practical experience related to college level teaching or administration. Each student must obtain prior approval from his/her advisor before registering for or starting an internship. Additionally, each student must pass all of the assigned internship requirements in order to receive a pass for the course. Special approval needed from the advisor.

EAHE599 - Thesis 599-1 to 6 Thesis.

EAHE600 - Dissertation 600-1 to 36 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

EAHE601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

EAHE699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Electrical and Computer Engineering

MISSION STATEMENT

The mission of the Department of Electrical and Computer Engineering is to serve society as a center for learning and innovation in all major areas of electrical and computer engineering. The department accomplishes its mission by disseminating existing knowledge through teaching, by creating new knowledge through research and publications, and by converting original ideas and concepts into new technologies. Through integration of education and research, the department creates the academic environment necessary for training innovators and leaders for the future.

Bachelor of Science Degree in Electrical Engineering

The fundamental goal of the undergraduate program in Electrical Engineering is to offer a high-quality education, designed to achieve the following specific educational objectives:

EDUCATIONAL OBJECTIVES

Within a few years of graduation, Electrical Engineering graduates are expected to attain:

1. Increasing responsibility beyond that in their entry-level description in job functions within Electrical Engineering or related employment, and/or
2. Successful progress within graduate degree programs in Electrical Engineering or other professional degrees such as other Engineering, Business, Law or Medicine, and
3. Continued successful professional development and adaptation to evolving technologies within their chosen field.

The flexibility of the electrical engineering curriculum allows the students to choose courses among four tracks: (a) Electronic Circuits and Devices: electronic circuits, instrumentation, RF circuit design, microwave circuit design. Relevant courses: ECE 423, ECE 438, ECE 440, ECE 446, ECE 447, ECE 449, ECE 479. (b) Electromagnetics and Photonics: microwave engineering, antenna systems, fiber optic systems. Relevant courses: ECE 441, ECE 448, ECE 472, ECE 477, ECE 479. (c) Power Systems and Energy: utility power systems, energy systems, electric drives. Relevant courses: ECE 481, ECE 483, ECE 484, ECE 486, ECE 487, ECE 488, ECE 489. (d) Signals and Control: signals and systems, signal processing, telecommunications, control. Relevant courses: ECE 456, ECE 459, ECE 466, ECE 467, ECE 468A, ECE 471, ECE 476, ECE 478.

Employment opportunities exist within a wide range of organizations, such as computer, semiconductor, aviation, electronics, microelectronics, broadcasting, telecommunications, defense, automotive, manufacturing and electric power companies, state and federal agencies and laboratories. Employment opportunities cover the spectrum of engineering activities, ranging from research and development, to systems analysis, automation, manufacturing, customer service and support, marketing and sales.

The undergraduate program in Electrical Engineering is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

THE CAPSTONE OPTION FOR TRANSFER STUDENTS

The SIU Capstone Option (see chapter three) is available to students who have earned an Associate in Engineering Sciences (AES) degree with a minimum cumulative 2.0/4.0 GPA on all accredited coursework prior to the completion of the AES, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. Students interested in the Capstone Option should contact the College of Engineering Advisement Office to develop a personal coursework pathway to degree completion.

Bachelor of Science Degree in Electrical Engineering, College of Engineering

Electrical Engineering Major

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
MATH 150	4
ECON 240-3 or ECON 241-3	3
BIOL 202	2
PHIL 104-3 and PHIL 105-3	6
ENGR 304I	3
PHYS 205A / PHYS 255A	4
Requirements for Major in Electrical Engineering	87

Degree Requirements	Credit Hours
PHYS 205B, PHYS 255B	4
MATH 250, MATH 251, MATH 305	10
Required ECE Courses	48
ECE 222, ECE 235, ECE 235L, ECE 296, ECE 296L, ECE 315, ECE 327, ECE 327L, ECE 336, ECE 345, ECE 345L, ECE 355, ECE 355L, ECE 356, ECE 356L, ECE 375, ECE 375L, ECE 385, ECE 385L, ECE 495E, ECE 495D	48
Technical Electives ¹	22
Total	126

¹ Approved by the Department. At least 21 hours of ECE electives, including at least nine hours of Engineering Design.

Electrical Engineering Major - Biomedical Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Foundation Skills	13
UNIV 101U	1
ENGL 101, ENGL 102	6
CMST 101	3
MATH (see major)	3
Disciplinary Studies	23
ECON 240 or ECON 241	3
Social Science Elective	3
Fine Arts Elective	3
Natural Sciences (see major)	6
BIOL 202	2
PHIL 104, PHIL 105	6
Integrative Studies	3

Degree Requirements	Credit Hours
Engineering 304I	3
Requirements for Electrical Engineering with a Biomedical Specialization	(9)+87
Basic Sciences	6
PHYS 205A, PHYS 205B, PHYS 255A, PHYS 255B	(6)+2
Science Elective (with lab) ¹	4
Mathematics	11
MATH 150, MATH 250, MATH 251, MATH 305	(3)+11
Required ECE Courses	48
ECE 222, ECE 235, ECE 235L, ECE 296, ECE 296L, ECE 315, ECE 327, ECE 327L, ECE 336, ECE 345, ECE 345L, ECE 355, ECE 355L, ECE 356, ECE 356L, ECE 375, ECE 375L, ECE 385, ECE 385L, ECE 495D, ECE 495E	
Technical Electives ²	22
Total	126

¹ For Science Elective choose from Chemistry or Biology.

² Approved by the Department. At least 17 hours of ECE, BME electives, including at least nine credit hours from ECE 438, ECE 458, ECE 467, ECE 468A, ECE 472, BME 485, ECE 534, ECE 539, ECE 568, ECE 572, ECE 578, BME 597. Limited to six credit hours of 500-level courses with approval from the Department.

Electrical Engineering Major - Power and Energy Engineering Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Foundation Skills	13
UNIV 101U	1
ENGL 101, ENGL 102	6
CMST 101	3
MATH 150	3
Disciplinary Studies	23

Degree Requirements	Credit Hours
ECON 240 or ECON 241	3
Social Science Elective	3
Fine Arts Elective	3
Natural Sciences (see major)	6
BIOL 202	2
PHIL 104, PHIL 105	6
Integrative Studies	3
ENGR 304I	3
Requirements for Electrical Engineering with a Power and Energy Specialization	(9)+87
Basic Sciences	5
PHYS 205A, PHYS 205B, PHYS 255A, PHYS 255B	(6)+2
Science Elective	4
Mathematics	11
MATH 150, MATH 250, MATH 251, MATH 305	(3)+11
Required ECE Courses	48
ECE 222, ECE 235, ECE 235L, ECE 296, ECE 296L, ECE 315, ECE 327, ECE 327L, ECE 336, ECE 345, ECE 345L, ECE 355, ECE 355L, ECE 356, ECE 356L, ECE 375, ECE 375L, ECE 385, ECE 385L, ECE 495D, ECE 495E	48
Technical Electives ¹	22
Total	126

¹ Approved by the Department. At least 18 hours from ECE 456, ECE 472, ECE 467, ECE 481, ECE 482, ECE 483, ECE 484, ECE 486, ECE 487, ECE 488, ECE 488.

Bachelor of Science Degree in Computer Engineering

The fundamental goal of the undergraduate program in Computer Engineering is to offer a high-quality education, designed to achieve the following specific educational objectives:

EDUCATIONAL OBJECTIVES

Within a few years of graduation, Computer Engineering graduates are expected to attain:

1. Increasing responsibility beyond that in their entry-level description in job functions within Computer Engineering or related employment, and/or
2. Successful progress within graduate degree programs in Computer Engineering or other professional degrees such as other Engineering, Business, Law or Medicine, and
3. Continued successful professional development and adaptation to evolving technologies within their chosen field.

In the computer engineering curriculum the students can choose courses in (a) Design Automation and Application Programming: Algorithms and software development for digital integrated circuits, embedded systems, microcontrollers, multicore architecture, networks. Relevant courses in this track are ECE 422, ECE 424, ECE 425, ECE 432, and ECE 456. (b) Computer Hardware Design: Design and evaluation of integrated circuits, configurable hardware, embedded systems, computer architectures. Relevant courses: ECE 422, ECE 423, ECE 424, ECE 425, ECE 427, ECE 428, ECE 429.

Employment opportunities exist within a wide range of organizations, such as computer, semiconductor, aviation, electronics, microelectronics, broadcasting, telecommunications, defense, automotive, manufacturing and electric power companies, state and federal agencies and laboratories. Employment opportunities cover the spectrum of engineering activities, ranging from research and development, to systems analysis, automation, manufacturing, customer service and support, marketing and sales.

The undergraduate program in Computer Engineering is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Bachelor of Science Degree in Computer Engineering, College of Engineering

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Foundation Skills	13
UNIV 101U	1
ENGL 101, ENGL 102	6
CMST 101	3
MATH (see major)	3
Disciplinary Studies	23
ECON 240 or ECON 241	3
Social Science Elective	3
Fine Arts Elective	3
Natural Sciences (see major)	6
BIOL 202	2
PHIL 104, PHIL 105	6
Integrative Studies	3

Degree Requirements	Credit Hours
ENGR 304I	3
Requirements for Major in Computer Engineering	(9)+87
Basic Sciences	6
PHYS 205A, PHYS 205B, PHYS 255A, PHYS 255B	(6)+2
Science Elective with lab ¹	4
Mathematics	11
MATH 150, MATH 250, MATH 251, MATH 305	(3)+11
Required ECE Courses	40
ECE 222, ECE 235, ECE 235L, ECE 296, ECE 296L, ECE 315, ECE 321, ECE 321L, ECE 327, ECE 327L, ECE 329, ECE 329L, ECE 345, ECE 345L, ECE 355, ECE 355L, ECE 495C, ECE 495D	
Technical Electives ²	30
Total	126

¹ Science Elective choose from Chemistry or Biology.

² Approved by the Department. At least 25 hours of ECE electives. At least 20 hours from the following list: ECE 422, ECE 423, ECE 424, ECE 425, ECE 427, ECE 428, ECE 429, ECE 432, two approved CS courses.

Dual B.S. Degree in Electrical Engineering and Computer Engineering

Electrical and Computer Engineering Dual Degree

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Foundation Skills	13
UNIV 101U	1
ENGL 101, ENGL 102	6
CMST 101	3
Mathematics (see major)	3
Disciplinary Studies	23

Degree Requirements	Credit Hours
ECON 240 or ECON 241	3
Social Science Elective	3
Fine Arts Elective	3
Natural Sciences (see major)	6
BIOL 202	2
PHIL 104, PHIL 105	6
Integrative Studies	3
ENGR 304I	3
Requirements for Dual Major in Electrical and Computer Engineering	(9)+11
Basic Sciences	6
PHYS 205A, PHYS 205B, PHYS 255A, PHYS 255B	(6)+2
Science Elective (with lab) ¹	4
Mathematics	11
MATH 150, MATH 250, MATH 251, MATH 305	(3)+11
Required ECE Courses	54
ECE 222, ECE 235, ECE 296, ECE 315, ECE 321, ECE 327, ECE 329, ECE 336, ECE 345, ECE 355, ECE 356, ECE 375, ECE 385, ECE 495C, ECE 495D	54
Technical Electives ²	40
Total	150

¹ Science Elective choose from Chemistry or Biology.

² Approved by the Department. At least 35 hours of ECE electives. At least 20 hours from the following list: ECE 422, ECE 423, ECE 424, ECE 425, ECE 427, ECE 428, ECE 429, ECE 432, two approved CS courses.

Second Bachelor's Degree

A student already holding one of the degrees may earn the other bachelor's degree upon completion of at least 24 hours (making a total of 150 hours minimum), provided that the student fulfills the Department requirements for both the degrees and the University Core Curriculum requirements.

Electrical and Computer Engineering Courses

ECE222 - Intro to Digital Computation 222-3 Introduction to Digital Computation. Digital computation to solve basic problems in electrical and computer engineering. Analyzing problems, flowcharting, coding, executing, diagnosing, and verifying solutions. Programming in C++ language. Prerequisite: Mathematics 111 with a grade of C or better. Lab fee: \$10 to help defray cost of equipment.

ECE235 - Electric Circuits I 235-3 Electric Circuits-I. Basic circuit concepts. Methods of analysis and resistive circuits. Circuit theorems. Circuits with operational amplifiers. Energy storage elements. First and second order RLC circuits. Circuits in sinusoidal steady state. Prerequisite: MATH 250 with a minimum grade of C.

ECE235L - Electric Circuits I Lab 235L-1 Electric Circuits I Laboratory. Use of Electronics equipment: Multimeter, power supply, breadboard, and oscilloscope. Ohm's Law and applications. Thevenin's Theorem and applications. Analysis of networks. First-order RL and RC circuits. Second-order RLC circuits. AC networks. Operational Amplifiers. Introduction to PSPICE and MATLAB with application to electric circuits. Prerequisite: MATH 250 with a minimum grade of C. Co-requisite: ECE 235. Lab fee: \$55 to help defray cost of equipment.

ECE296 - Intro Software Tools Robotics 296-2 Introduction to Software Tools and Robotics. Scientific computing using MATLAB and Simulink. Introduction to interpreted programming languages and basic programming principles. Introduction to Programmable Logic Controllers and Microcontrollers. Prerequisite: MATH 250 with a grade of C or better. Co-requisite: ECE 296L.

ECE296L - SW Tools & Robotics Lab 296L-2 Introduction to Software Tools and Robotics Lab. Hands-on application of micro-controllers for motor control, basic robotics, and data acquisition using various sensors. Application of interpreted programming languages to interact with various hardware. Use of Mindstorms hardware to demonstrate principles of robotic control. Hands-on application of programmable logic controllers and ladder logic. Prerequisite: MATH 250 with a grade of C or better. Co-requisite: ECE 296. Lab fee: \$25 to help defray cost of software licenses and equipment.

ECE315 - Math Methods ECE 315-4 Mathematical Methods in ECE. A four-part course designed to introduce all Electrical and Computer Engineering students to fundamental and advanced mathematical methods, through applications to engineering problems. Part A: Number systems. Boolean algebra. Propositional and predicate calculus. Boolean algebra and its applications to digital circuit design. Summations and induction. Part B: applications of complex variables to electrical circuits, systems and electromagnetic fields. Part C: applications of linear algebra and matrix methods to electric circuits, systems and electromagnetic fields. Part D: probability, combinatorics and statistics with applications to ECE problems. Prerequisite: Mathematics 250.

ECE321 - Intro Software Engineering 321-3 Introduction to Software Engineering. Introduction to tools, concepts and techniques to develop complex software projects. The tools include object-oriented programming and advanced data structures. Concepts and techniques include introduction to principles of operating systems and introduction to software engineering, including requirements specifications, design methodology, and testing. Prerequisite: ECE 222 with a grade of C or better.

ECE321H - Intro to Software Engineering 321H-3 Introduction to Software Engineering. (University Honors Program) Introduction to tools, concepts and techniques to develop complex software projects. The tools include object-oriented programming and advanced data structures. Concepts and techniques include introduction to principles of operating systems and introduction to software engineering, including requirements specifications, design methodology, and testing. Prerequisite: ECE 222 with grade 'C' or better.

ECE321L - Intro to Software Engr Lab 321L-1 Introduction to Software Engineering-Lab. Application development on Visual Studio. Prerequisite: ECE 222 with a grade of C or better. Co-requisite: ECE 321. Lab fee: \$10 to help defray cost of equipment.

ECE324 - Computer Systems Security 324-3 Computer Systems Security. Principles of computer systems security. Security basics (thread models, attacks and defenses), basic security tools (cryptographic primitives, authentication, digital signature, access control), software systems security (buffer overflow, virus, SQL injection etc.), networked systems security (denial of service attack, firewall

and IDS, Wi-Fi security), cloud security, principles of hardware platform security. Prerequisite: ECE 315 with a grade of C or better.

ECE327 - Digital Circuit Design w/HDL 327-3 Digital Circuit Design with HDL. Boolean Algebra. Number Systems. Modular combinational and sequential circuit design. Arithmetic circuits. Programmable logic. Flip-flops, memory, shifters, counters. Finite State Machine Design. Synthesis and simulation with the Verilog Hardware Description Language (HDL). Prerequisite: ECE 315 with a grade of C or better. Concurrent enrollment allowed in ECE 327L.

ECE327H - Digital Circuit Design w/HDL 327H-3 Digital Circuit Design with HDL. (University Honors Program) Boolean Algebra. Number Systems. Modular combinational and sequential circuit design. Arithmetic circuits. Programmable logic. Flip-flops, memory, shifters, counters. Finite State Machine Design. Synthesis and simulation with the Verilog Hardware Description Language (HDL). Prerequisite: ECE 315 with a grade of C or better. Concurrent enrollment allowed in ECE 327L.

ECE327L - Digital Circuit Design HDL Lab 327L-1 Digital Circuit Design with HDL-Laboratory. Implementation of digital combinational and sequential designs in hardware using SSI/MSI parts. Synthesis and simulation with the Verilog Hardware Description Language (HDL) using the Cadence SimVision and Cadence RTL Compiler CAD tools. Prerequisite: ECE 315 with a grade of C or better. Lab fee: \$60 to help defray cost of software licenses, equipment and consumable items.

ECE329 - Computer Organization & Design 329-3 Computer Organization and Design. Introduction to the design and organization of digital computers: data-path and control, hardwired and microprogrammed control, interrupts, memory organization concepts. An introduction to optimization issues. Design and implementation of simple computers with hardwired and microprogrammed control. Prerequisite: ECE 315 with a grade of C or better. Concurrent enrollment required in ECE 329L.

ECE329H - Computer Organization & Design 329H-4 Computer Organization and Design. (University Honors Program) Introduction to the design and organization of digital computers: data-path and control, hardwired and microprogrammed control, interrupts, memory organization concepts. An introduction to optimization issues. Design and implementation of simple computers with hardwired and microprogrammed control. Prerequisite: ECE 327.

ECE329L - Computer Org/Design Lab 329L-1 Computer Organization and Design Lab. A sequence of labs for design and implementation of simple computers with hardwired and microprogrammed control. Prerequisite: ECE 315 with a grade of C or better. Concurrent enrollment in ECE 329 required. Lab fee: \$50 to help defray cost of equipment and consumable items.

ECE336 - Electric Circuits II 336-3 Electric Circuits II. Sinusoidal steady state power, three-phase circuits, magnetic circuits, mutual inductance, frequency response, Laplace transform and applications to circuits, Fourier series and Fourier transform, filter circuits, Two- and three-port networks. Use of Pspice. Prerequisite: ECE 235 with a minimum grade of C.

ECE337 - Bioelectricity & Biosensing 337-3 Bioelectricity and Biosensing. The course introduces the sources of electrical signals in biologic systems, such as nerve, brain and muscle, and the techniques to sense such signals for biomedical applications. Topics include bio-properties and electrical properties of membranes, ion channels, action potentials and Hodgkin-Huxley model, electrical signal propagation, synaptic transmission, electrical stimulation, potentiometric and amperometric biosensors. The fundamental challenges in sensing bioelectrical signals are also discussed.

ECE345 - Electronics 345-3 Electronics. Introduction to microelectronics, analog and digital systems, basic physics of semiconductors, diode models and circuits, bipolar junction transistors (BJTs) and BJT amplifier circuits, MOSFETs and MOSFET amplifier circuits, operational amplifiers (op-amps), op-amp circuits, non-ideal characteristics of the op-amp. Lecture. Prerequisites: ECE 235 and PHYS 205B with grades of C or better. Concurrent enrollment in ECE 345L allowed.

ECE345H - Electronics Honors 345H-3 Electronics-Honors. (University Honors Program) Introduction to microelectronics, analog and digital systems, basic physics of semiconductors, diode models and circuits, bipolar junction transistors (BJTs) and BJT amplifier circuits, MOSFETs and MOSFET amplifier circuits, operational amplifiers (op-amps), op-amp circuits, non-ideal characteristics of the op-amp. Lecture.

Prerequisite: ECE 235 and PHYS 205B with grades of C or better. Concurrent enrollment allowed in ECE 345L.

ECE345L - Electronics Lab 345L-1 Electronics Lab. Introduction to microelectronics, analog and digital systems, basic physics of semiconductors, diode models and circuits, bipolar junction transistors (BJTs) and BJT amplifier circuits, MOSFETs and MOSFET amplifier circuits, operational amplifiers (op-amps), op-amp circuits, non-ideal characteristics of the op-amp. Laboratory. Prerequisite: ECE 235 and PHYS 205B with grades of C or better. Co-requisite: ECE 345. Lab fee: \$50 to help defray cost of equipment and consumable items.

ECE355 - Signals & Systems 355-3 Signals and Systems. Signal and system classification, operations on signals, time-domain analysis, impulse response and stability, Fourier series and transform, application to communications, Laplace transform, application to linear circuits and systems, frequency response techniques, introduction to discrete-time signals and systems, sampling, discrete and fast Fourier transforms. Lecture. Prerequisite: ECE 235 and MATH 305 with grades of C or better. Concurrent enrollment in ECE 355L allowed. Lab fee: \$20 to help defray cost of software licenses and equipment.

ECE355H - Signals & Systems 355H-3 Signals and Systems Honors. (University Honors Program) Signal and system classification, operations on signals, time-domain analysis, impulse response and stability, Fourier series and transform, application to communications, Laplace transform, application to linear circuits and systems, frequency response techniques, introduction to discrete-time signals and systems, sampling, discrete and fast Fourier transforms. Lecture. Prerequisite: ECE 235 and MATH 305 with grades of C or better. Concurrent enrollment allowed in ECE 355L. Lab fee: \$20 to help defray cost of software licenses and equipment.

ECE355L - Signals and Systems Lab 355L-1 Signals and Systems Lab. Signal and system classification, operations on signals, time-domain analysis, impulse response and stability, Fourier series and transform, application to communications, Laplace transform, application to linear circuits and systems, frequency response techniques, introduction to discrete-time signals and systems, sampling, discrete and fast Fourier transforms. Laboratory. Prerequisite: ECE 235 and MATH 305 with grades of C or better. Concurrent enrollment in ECE 355 required.

ECE356 - Systems and Control 356-3 Systems and Control. Introduction to signals, linear systems theory, the Laplace transform, modeling of dynamic systems and circuits, dynamic response, basic properties of feedback PID control, root-locus design method, and frequency-response design method. Prerequisite: ECE 235, ECE 355 (may be taken concurrently), and MATH 305. ECE 356L may also be taken concurrently.

ECE356L - Systems & Control Lab 356L-1 Systems and Control Laboratory. Modeling and identification of linear time-invariant systems, understanding the effects of time delay, lead/lag controller design, PID control, controller implementation on digital computers all on a heat flow testbed. Prerequisite: ECE 356 with a grade of C or better. Lab fee: \$20 to help defray cost of equipment.

ECE361 - Intro Biomedical Engineering 361-3 Introduction to Biomedical Engineering. This course provides an introductory overview of current trends and principles of biomedical engineering. Application of engineering approaches to the analysis of biomedical systems. Principles, practice, and the role of biomedical engineers in science, engineering, healthcare, and commercialization of medical products. Professional moral and ethical issues in biomedical engineering. Prerequisite: ECE 296 with a grade of C or better or consent of instructor.

ECE375 - Intro Electromagnetic Fields 375-3 Introduction to Electromagnetic Fields. Elementary electromagnetic field theory, vectors, static, quasi-static and time-harmonic fields, transmission lines and materials, Smith charts, Maxwell's equations in integral and differential forms, force, energy and power, plane waves, engineering tools and applications. Lecture. Prerequisite: ECE 235, MATH 251 and PHYS 205B with grades of C or better. Concurrent enrollment allowed in ECE 375L.

ECE375H - Intro Electromagnetic Fields 375H-4 Introduction to Electromagnetic Fields. (University Honors Program) Elementary electromagnetic field theory, vectors, static, quasi-static and time-harmonic fields, transmission lines and materials, Smith charts, Maxwell's equations in integral and differential

forms, force, energy and power, plane waves, engineering tools and applications. Lecture and laboratory. Prerequisites: ECE 235, Mathematics 251 and Physics 205B.

ECE375L - Intro Electromagnetic Lab 375L-1 Intro Electromagnetic Laboratory. Study of elementary electromagnetic fields and waves, guided and wireless, using engineering simulation, fabrication, measurement and testing tools and design applications. Laboratory. Prerequisite: ECE 235, MATH 251 and PHYS 205B with grades of C or better. Co-requisite: ECE 375. Lab fee: \$110 to help defray cost of software licenses.

ECE385 - Electromech Energy Conversion 385-3 Electromechanical Energy Conversion. Power in single phase and three-phase circuits. Magnetic circuits, voltage induction, electromagnetic force. Power transformers. AC machines: synchronous machines; synchronous motors; induction motors. DC machines. Prerequisite: ECE 235 with a grade of C or better. Concurrent enrollment allowed in ECE 385L.

ECE385L - Electric Machines Lab 385L-1 Electric Machines Lab. Laboratory experiments to accompany the ECE 385 course. AC power measurements, power transformers, synchronous machine, induction machine, DC machine. Prerequisite: ECE 235 with a grade of C or better; co-requisite: ECE 385. Lab fee: \$70 to help defray cost of equipment.

ECE391 - Engr Analysis of Kinetics 391-3 Engineering Analysis of Kinetics. The purpose of this course is to introduce students to engineering analysis of human movement based on the mechanical laws of motion. Kinetics is an important branch of biomedical engineering, and it combines the fields of engineering mechanics with the fields of biology and physiology. In the course, students should gain an understanding of the mechanical and anatomical principles that govern human motion and develop the ability to link the structure of the human body with its function from an engineering perspective. Prerequisite: MATH 305, or consent of instructor. Concurrent enrollment allowed in ECE 361.

ECE392 - ECE Co-op Education 392-1 to 6 Electrical Engineering Cooperative Education. Supervised work experience in industry, government or in a professional organization. Students work with on-site supervisor and faculty adviser. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Restricted to sophomore standing.

ECE412 - Wireless Networks 412-3 Wireless Networks. (Same as ECE 512) This undergraduate level course first introduces several widely adopted wireless communication technologies and then presents the concept, structure, and principles of ad hoc wireless networks. Novel applications in those networks will also be introduced. The coursework will include paper and literature reviews, presentations, assignments, and projects that will enable students to be familiar with ad hoc wireless networks. NS3 will be used for student projects in this course. Prerequisites: ECE 222 and ECE 355 with grades of C or better. Lab fee: \$10 to help defray cost of equipment.

ECE422 - Comp Network Syst Arch 422-4 Computer Network System Architecture. (Same as ECE 553) Principles of Computer Networks. Protocols and system level implementations. Socket programming, router and switching fabric architecture, security and packet classification techniques, multimedia networking and QoS. Prerequisite: ECE 327. Lab fee: \$10 to help defray cost of equipment.

ECE423 - Digital VLSI Design 423-4 Digital VLSI Design. (Same as ECE 513) Principles of the design and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. MOS transistor theory and the CMOS technology. Characterization and performance estimation of CMOS gates, CMOS gate and circuit design. Layout and simulation using CAD tools. CMOS design of datapath subsystems. Design of finite state machines. Examples of CMOS system designs. Laboratory experience in CMOS VLSI design. Lecture and Laboratory. Prerequisite: ECE 327 and 345. Lab fee: \$35 to help defray cost of software licenses and equipment.

ECE424 - Design of Embedded Systems 424-4 Design of Embedded Systems. (Same as ECE 514) Introduction of modern embedded system application, platform architecture and software development. Principles of embedded processor architecture, operating systems and networking connectivity. Design and optimize in terms of system power, security and performance. Rapid prototyping using Intel-Atom based platform. Lecture and laboratory. Prerequisite: ECE 321 and ECE 329, or consent of instructor. Lab fee: \$10 to help defray cost of equipment.

ECE425 - VLSI Design & Test Automation 425-4 VLSI Design and Test Automation. (Same as ECE 520) Principles of the automated synthesis, verification, testing and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. Resource allocation and scheduling in high-level synthesis. Automation of the logic synthesis for combinational and sequential logic. The physical design automation cycle and CMOS technology considerations. Fault modeling and testing. Timing analysis. Laboratory experience using commercial tools for synthesis and layout. Prerequisite: ECE 329. Lab fee: \$30 to help defray cost of software licenses and equipment.

ECE426 - Implement VLSI Sysys w/HDL 426-4 Implementation of VLSI Systems with HDL. (Same as ECE 516) This course is dedicated for advanced Digital VLSI architecture and system implementation for high performance and low power digital signal processing applications. Application-specific processors and architectures to support real time processing of signal processing systems will be studied. Hands-on experience of using state-of-the-art CAD tools on designing such kind of VLSI architecture and systems. Upon completion of this course, students will entail large HDL-based implementation of a complete VLSI system. Prerequisite: ECE 327 with a grade of C or better. Lab fee: \$35 to help defray cost of software licenses and equipment.

ECE427 - Intro Interconnection Networks 427-3 Introduction to Integrated Interconnection Networks. Role of interconnection networks. Specifications and constraints. Topology, routing, flow control, deadlock, livelock, arbitration, allocation. Prerequisite: ECE 329 with a grade of C or better.

ECE428 - Programmable ASIC Design 428-4 Programmable ASIC Design. (Same as ECE 528) Principle and practice of designing and implementing Application-Specific Integrated Circuits (ASIC). Field Programmable Gate Arrays (FPGA). Timing analysis, timing closure and managing difference clock domains in ASIC design. Complex arithmetic circuits. Digital signal processing (DSP) circuits. FPGA microprocessors. Prerequisite: ECE 327 with a grade of C or better. Lab fee: \$50 to help defray cost of equipment and consumable items.

ECE429 - Computer Systems Architecture 429-3 Computer Systems Architecture. (Same as ECE 529) Principles of performance evaluation, processor microarchitecture, instruction-level parallelism, static and dynamic pipeline considerations. Superscalar processors. Multiprocessor systems. Memory hierarchy design, cache design. Mutual exclusion and synchronization mechanisms. Prerequisite: ECE 329 with a grade of C or better.

ECE430 - Systems Programming 430-4 Principles of Systems Programming. Introduction to concepts, techniques and tools to develop complex software to manage hardware resources. Operating system modules and interfaces, kernel development, process scheduling, dynamic memory control, device drivers. Design methodologies to meet system requirements specifications. Prerequisite: ECE 321 with a grade of C or better. Lab fee: \$20 to help defray cost of equipment.

ECE431 - Cloud Computing 431-3 Cloud Computing. Cloud computing has evolved as a widely accepted and adopted computing model recently. This undergraduate course introduces the concepts, basic principles, overall structures, and key technologies of cloud computing, as well as several popular cloud computing services offered by major IT companies. In addition to the general cloud computing, the course is also featured by the introduction of MapReduce and Hadoop, which are the most popular programming model and platform for processing large amounts of data in parallel on cluster machines, respectively. The course work will include paper and literature review, presentations, assignments, and projects that will enable students to learn and use state-of-art cloud computing technologies and products. Amazon EC2 and Hadopp will be used for course projects, through which students will gain experience on how to deploy or build applications over computing clusters. Prerequisite: ECE 329 with a minimum grade of C or instructor consensus. Lab fee: \$10 to help defray cost of equipment.

ECE432 - Program Multi-Core Processors 432-3 Programming for Multi-Core Processors. (Same as ECE 532) Multi-core architecture, threads, thread execution models, thread priority and scheduling, concurrency, multi-threaded programming models, synchronization, performance measurement and local balance, software tools for multi-threaded programming. Restricted to ECE students or consent of advisor. Prerequisite: ECE 222 with a grade of C or better. Lab fee: \$20 to help defray cost of equipment.

ECE436 - Comp Methods in BME 436-3 Computational Methods in Biomedical Engineering. Algorithmic, statistical and machine learning foundations of computational biology. Maps, sequences, and genomes.

Biological sequence analysis, microarray data, gene expression analysis, gene selection, sequence alignment. Prerequisites: ECE 222, ECE 321 with grades of C or better, or consent of instructor.

ECE438 - Medical Instrumentation 438-3 Medical Instrumentation: Application and Design. (Same as BME 538 and ECE 538) This course introduces the students to the field of medical instrumentation. Medical instrumentation is the application of advanced engineering technology to problems in biology and medicine. The course will focus on fundamentals of instrumentation systems, sensors, amplifiers, and signal precondition. In addition, the course also includes design and applications of medical instrumentation, biopotential measurement, biosensor, biomedical signal processing, and other related topics. Prerequisites: MATH 305 and ECE 361 with grades of C or better, or consent of instructor. Concurrent enrollment in ECE 361 allowed. Lab fee: \$45 to help defray cost of software licenses and equipment.

ECE440 - CMOS RF-IC Design 440-4 CMOS Radio-Frequency Integrated Circuit Design. (Same as ECE 535) Introduction of RF IC, passive RLC Networks, passive IC components, MOS Transistors, distributed systems, Smith Chart and S-Parameters, introduction to Band-width estimation, biasing and voltage reference, basic High Frequency Amplifiers, introduction to: noise in RF IC, Low Noise Amplifiers, Power Amplifiers, Phase-Locked Loops and Oscillators. Lecture and laboratory. Prerequisite: ECE 345, ECE 375 or equivalent. Lab fee: \$35 to defray the cost of software licenses and equipment.

ECE441 - Photonics I 441-4 Photonics I. (Same as ECE 542) Ray optics, wave optics, beam optics, polarization of light, statistical optics, photons and atoms. Prerequisite: ECE 375 with a grade of C or better. Lab fee: \$50 to help defray the cost of consumable items as well as maintaining or replacing the existing equipment.

ECE446 - Electronic Circuit Design 446-4 Electronic Circuit Design. (Same as ECE 546) Analysis and design of electronic circuits, both discrete and integrated. Computer-aided circuit design and analysis. Design of amplifier and filter circuits. Circuit stability analysis and frequency compensation techniques. Prerequisite: ECE 345 and ECE 355 with a grade of C or better or concurrent enrollment. Lab fee: \$10 to help defray cost of software licenses and equipment.

ECE447 - Semiconductor Devices 447-4 Semiconductor Devices. (Same as ECE 547) Semiconductor industry and Moore's law. Review of quantum mechanics of atoms. From atoms to crystals: energy bands, effective mass and density-of-states. Semiconductor statistics. Carrier transport phenomena. PN junctions. Schottky junctions. Bipolar junction transistors (BJTs). MOSFETs: capacitance-voltage and current-voltage characteristics, threshold voltage, scaling and short-channel effects, SPICE models. CMOS process integration. Basic optoelectronic devices: LEDs and solar cells. Lecture and laboratory. Prerequisite: ECE 345 or equivalent. Lab fee: \$25 to help defray cost of software licenses.

ECE448 - Photonics II 448-4 Photonics II. (Same as ECE 544) Fourier optics, fiber optics, electro-optics, nonlinear optical media, acousto-optics, photonic switching, optical and interconnections and optical storage. Prerequisite: ECE 441 or consent of instructor. Lab fee: \$80 to help defray the cost of consumable items as well as maintaining or replacing the existing equipment and also to cover the cost of two licenses for VPI Photonics software. Lab fee: \$80 to help defray cost of software licenses.

ECE449 - VLSI Characterization 449-3 VLSI Material and Device Characterization. Materials for modern VLSI: semiconductor crystals, tubular and monolayer materials, organic materials, heterostructures, wafers and notations. Nanoscale fabrication processes: IC production flow, selective doping, nanolithography, etching, contacts and interconnects, spontaneous formation and ordering of nanostructures, fabrication of MEMS/NEMS systems, IC assembly and packaging. VLSI device characterization: electrical CV and IV profiling, defect characterization using DLTS, carrier mobility and lifetime measurements, optical microscopy and spectroscopy, particle beam and X-ray techniques. Reliability of devices and ICs: harsh environments, hot carriers, NBTI, electromigration, electrostatic discharge, IC power dissipation and cooling. Prerequisite: ECE 447 or ECE 423 or PHYS 425 with a grade of C or better or instructor consent.

ECE456 - Mechatronics/Embedded Control 456-4 Mechatronics and Embedded Control. (Same as ECE 561) Components of mechatronics systems, mathematical modeling, system identification, numerical tools for design and analysis, single-loop controller design, embedded systems, data

acquisition and signal conditioning, sensors, actuators, networked control. This course includes lab session. Prerequisite: ECE 315 and ECE 356. Lab fee: \$35.

ECE457 - Computational Electronics 457-3 Computational Electronics. Elements of computational science/engineering. High-performance clusters and software tools for HPCs. Essential numerical methods. Fundamental physics and modeling of charge transport in semiconductor VLSI devices. Numerical solution of Poisson equation. Numerical solution of carrier continuity equations and terminal currents in semiconductor devices. Numerical solution of the Schrodinger equation. Electronic bandstructure calculations using the tight-binding formalism. Introduction to NEGF formalism. Commercial and non-commercial semiconductor device modeling tools. Prerequisite: ECE 447 or PHYS 425 with a grade of C or better or instructor consent. Project-based fee: \$25 to help defray cost of software licenses.

ECE458 - Digital Image Processing I 458-3 Digital Image Processing I. (Same as ECE 558) Basic concepts, scope and examples of digital image processing, digital image fundamentals, image sampling and quantization, an image model, relationship between pixels, enhancement in the spatial domain, enhancement in the frequency domain, image segmentation, basics of color image processing. Prerequisite: ECE 355 or consent of instructor.

ECE459 - MEMS and Micro-Engineering 459-3 MEMS and Micro-Engineering. Introduction to micro-electro-mechanical systems (MEMS), manufacturing techniques, microsensors, microactuators, microelectronics and micro-controllers. Lecture and laboratory. Prerequisite: ECE 315 and ECE 356.

ECE460 - Principles of BME 460-2 Principles of Biomedical Engineering. Principles of biomechanics, biomaterials, electrophysiology, modeling, instrumentation, biosignal processing, medical imaging, and biomedical optics. Not for credit towards the BS in Electrical or in Computer Engineering. Prerequisite: MATH 305 with a grade of C or better or consent of instructor.

ECE466 - Linear Control Systems 466-3 Linear Control Systems. Introduction to analysis of linear dynamical systems in time and frequency. Review of linear algebra and solutions of linear differential equations. State space representations, state transition matrix, and stability. Design and synthesis of controllers for linear systems. Prerequisites: ECE 355 and ECE 356.

ECE467 - Intro to Biomedical Imaging 467-4 Introduction to Biomedical Imaging. (Same as ECE 567 and BME 532) Biomedical imaging. X-ray imaging. Computed tomography (CT). Ultrasound. Magnetic resonance imaging (MRI). Image quality. Image reconstruction. Prerequisite: MATH 305 with a grade of C or better, or consent of instructor. Lab fee: \$30 to help defray cost of software licenses and equipment.

ECE468A - Digital Signal Processing 468A-4 Digital Signal Processing. Discrete-time signals and systems: z-transform; discrete Fourier transform, fast Fourier transform algorithms; digital filter design; digital filter realizations. Lecture and laboratory. Prerequisite: ECE 355. Lab fee: \$20 to help defray cost of software licenses.

ECE468B - Digital Signal Processing 468B-3 Digital Signal Processing. Discrete-time signals and systems: z-transform; discrete Fourier transform, fast Fourier transform algorithms; digital filter design; digital filter realizations. Lecture and laboratory. Restricted to graduate standing. Lab fee: \$20 to help defray cost of software licenses.

ECE471 - Wireless Communication 471-3 Wireless Communication Systems. This course covers fundamentals of wireless communication systems. Topics include wireless system architectures, channel modeling, introduction to cellular systems, digital modulation and multiple-access techniques, introduction to multi-antenna techniques, performance analysis, wireless physical layer security, future trends in wireless communications. Prerequisite: ECE 315 and ECE 355 or consent of instructor. Restricted to enrollment in ECE program or consent of instructor. Project-based fee: \$20 to help defray cost of software licenses.

ECE472 - Antennas I 472-4 Antennas I. (Same as ECE 575) Analysis, design, fabrication, measurement and CAD applied to basic antenna types. Fundamental parameters. Friis transmission equation. Impedance and pattern measurements. Resonant microstrip and wire antennas. Arrays and line sources. Lecture and Laboratory. Prerequisite: ECE 375. Lab fee: \$120 to help defray cost of software licenses.

ECE474 - Speech Processing 474-3 Speech Processing. (Same as BME 533, ECE 533) This course introduces students to the rapidly developing field of speech processing. Fundamentals of speech production system, acoustic theory, signal analysis of speech, speech coding, speech synthesizing, and speech recognition algorithms. Prerequisites: MATH 305 and ECE 361 with grades of C or better or consent of instructor. Concurrent enrollment allowed in ECE 361.

ECE476 - Intro to Info Theory 476-3 Introduction to Information Theory and Channel Coding. (Same as ECE 555) Entropy and Mutual Information. Channel Capacity. Gaussian Channel. Linear Block Codes. Convolutional Codes. Advance Channel Coding Techniques. Prerequisite: ECE 315 and ECE 355.

ECE477 - Fields and Waves I 477-3 Fields and Waves I. Transmission lines for communications. Guided wave principles and resonators. Applications in electronics, optoelectronics and photonics. Principles of radiation. Solution techniques for Laplace's equation and one-dimensional wave equation. Prerequisite: ECE 375.

ECE478 - Communication Systems 478-4 Principles of Communication Systems. (Same as ECE 570) This course covers principles of communication systems. Topics include (1) representation of signals and systems, (2) amplitude modulation, (3) angle modulation, (4) probability theory and random processes for communication system designs, (5) transition from analog to digital and pulse code/delta modulation, (6) baseband digital transmission, (7) digital band-pass transmission techniques, (8) introduction to information theory and coding, (9) wireless channel modeling, (10) cellular systems and performance analysis. Restricted to enrollment in ECE program or consent of instructor. Lectures and laboratory projects. Prerequisites: ECE 315 and ECE 355 or consent of instructor.

ECE479 - Microwave Engineering I 479-4 Microwave Engineering I. (Same as ECE 562) Electromagnetic theory, analysis, design, fabrication, measurement and CAD applied to passive networks at microwave frequencies. Topics include: Transmission lines, Waveguides, Impedance matching, Tuning, Resonators, Scattering parameters, the Smith Chart. Lecture and Laboratory. Prerequisite: ECE 375. Lab fee: \$100 to help defray cost of software licenses.

ECE481 - Wind & Solar Pwr Systems 481-3 Wind and Solar Energy Power Systems. (Same as ECE 581) This course introduces students to wind and solar energy power systems. Planning of wind generation; and operation of wind generators, mechanical and electrical design, power conditioning, control and protection. Planning, operation and design of electric solar plants; power conditioning, control and protection. Prerequisite: ECE 235 with a grade of C or better or equivalent.

ECE482 - Power Converter Design 482-3 Power Converter Design and Control. (Same as ECE 582) This course covers all the steps required for designing an actual power converter or electric drive system. The power stage design considerations, gate drive circuits, isolated high voltage/current measuring circuits, and application of a Texas Instrument Digital Signal Processor (DSP) for implementing different control schemes are discussed in detail. A brief introduction about the digital control theory and implementation of digital controller transfer functions using the DSP are provided as well. Prerequisite: ECE 356 with a grade of C or better. Lab fee: \$65 to help defray cost of software licenses and equipment.

ECE483 - Electric Drive Systems 483-3 Electric Drive Systems. (Same as ECE 583) Course content is roughly 1/3 power electronics, 1/3 applied control and 1/3 electric machinery and focuses on analysis, simulation, and control design of electric drive based speed, torque, and position control systems. Advanced topics depending on the semester are taught. Prerequisite: ECE 356 with a grade of C or better. Lab fee: \$65 to help defray cost of software licenses and equipment.

ECE484 - Electric and Hybrid Vehicles 484-3 Electric and Hybrid Vehicles. (Same as ECE 584) This course covers an entire range of topics related to analysis, design, control, and optimization of electric, hybrid, and plug-in hybrid power trains including automotive applications of adjustable speed motor drives, energy storage systems, and advanced power converters. Prerequisite: ECE 235 with a grade of C or better or instructor consent. Lab fee: \$65 to help defray cost of software licenses and equipment.

ECE486 - Clean Electric Energy 486-3 Clean Electric Energy. History and future of energy resources and their use as a component of electrical systems. Fossil fuels and renewable energy sources. Environmental and economical impacts of various energy sources. Electric energy generating plants and

distributed generation. Design of hybrid renewable energy systems. Prerequisite: ECE 385 with a grade of C or better.

ECE487 - Power Systems Analysis 487-3 Power Systems Analysis. Modeling and analysis of electric power systems. Topics covered: ac power, generators, power transformers, transmission line parameters and steady state operation, computation of power flows. The course uses power system analysis software. Lecture. Prerequisite: ECE 385 with a minimum grade of C.

ECE488 - Power System Engineering 488-3 Power System Engineering. (Same as ECE 588) The course covers topics involving the design and operation of a power system. Topics: symmetrical and unsymmetrical power system faults, power system protection design, transient stability of power generators, power system economic operation, power system control, transient operation of transmission lines. The course uses power system software. Lecture. Prerequisite: ECE 235 with a grade of C or better or consent of instructor.

ECE489 - Electric Power Distribution 489-3 Electric Power Distribution. (Same as ECE 589) Design of primary and secondary distribution networks. Load characteristics. Voltage regulation. Metering techniques and systems. Protection of distribution systems. Special topics related to power distribution. Prerequisite: ECE 235 with a grade of C or better.

ECE490 - Biomedical Systems Modeling 490-3 Biomedical Systems Modeling. Modeling and analysis of biomedical systems. Engineering principles and computational methods to solve problems that are biological, physiological, and/or medical. Quantitative understanding of major physiologic functions. Prerequisites: MATH 305 and ECE 361 with grades of C or better or consent of instructor. Concurrent enrollment allowed in ECE 361.

ECE492 - Special Studies Electrical Eng 492-1 to 6 Special Studies in Electrical Engineering. Individual projects and problems selected by student or instructor. Open to seniors only. Not for graduate credit. Special approval needed from the instructor.

ECE493 - Special Topics Electrical Engr 493-1 to 4 Special Topics in Electrical Engineering. Lectures on topics of special interest to students in various areas of electrical engineering. Designed to test new and experimental courses in electrical engineering. Special approval needed from the instructor.

ECE494 - Biomedical Ultrasound 494-3 Biomedical Ultrasound. (Same as ECE 539 and BME 541) Diagnostic ultrasound is an ultrasound-based biomedical imaging technique used to visualize muscles, tissue, and many internal organs, to capture their size, structure and any pathological lesions. This course is an introduction to the principles and applications of biomedical ultrasound. This course will focus on fundamentals of acoustic theory, principles of ultrasonic detection and imaging, design and use of currently available tools for performance evaluation of diagnostic devices, and biological effects of ultrasound. Prerequisites: MATH 305 and ECE 361 with grades of C or better, or consent of instructor. Concurrent enrollment allowed in ECE 361.

ECE495C - CEGR Senior Design I 495C-3 Computer Engineering Senior Design I. Capstone Design part 1. Preparation for professional computer engineering practice with a major design experience based on earlier coursework, incorporating appropriate engineering standards and multiple constraints. Includes aspects of project development and design within a team such as communicating, documenting, establishing goals, planning tasks, meeting deadlines, analyzing risk and fulfilling responsibilities professionally and ethically. Not for graduate credit. Prerequisites: ECE 315, 321, 329, and 345 with grades of C or better. Restricted to senior standing in Computer Engineering. Lab fee: \$50 to help defray cost of software licenses, equipment and consumable items.

ECE495D - ECE Senior Design II 495D-3 Electrical and Computer Engineering Senior Design II. Capstone Design part 2. Continuation of a major design experience based on earlier coursework, incorporating appropriate engineering standards and multiple constraints. Team approach in engineering projects. Work plan/time scheduling. Design options & cost-benefit analysis. Development of the final decision. Team coordination & documentation of team member efforts, design stages, team communication and team decision making processes. Implementation of the design (if the project warrants). Evaluation of the final product. Written, oral and poster presentation of final design. Not for

graduate credit. Prerequisite: ECE 495C or ECE 495E. Lab fee: \$50 to help defray cost of software licenses, equipment and consumable items.

ECE495E - EE Senior Design I 495E-3 Electrical Engineering Senior Design I. Capstone Design part 1. Preparation for professional electrical engineering practice with a major design experience based on earlier coursework, incorporating appropriate engineering standards and multiple constraints. Includes aspects of project development and design within a team such as communicating, establishing goals, planning tasks, meeting deadlines, analyzing risk and fulfilling responsibilities professionally and ethically. Not for graduate credit. Prerequisites: ECE 327, 345, 356, 375 and 385 with grades of C or better. Restricted to senior standing in Electrical Engineering. Lab fee: \$50 to help defray cost of software licenses, equipment and consumable items.

ECE495M - BME Senior Design I 495M-3 Biomedical Engineering Senior Design I. Capstone Design part 1. Includes proposal and preliminary designs as part of a team project. Project development skills, scope of work, feasibility and cost-benefit analysis, trade studies, quality function deployment, ethical issues, professionalism, documentation of team member efforts, preliminary designs, identification and assignment of tasks to project team members, coordination of interdisciplinary team effort, development of final proposal, design work, design review, oral presentations of final proposal. Prerequisites: ECE 361, 337, 391.

ECE496A - ECE Honors Reading 496A-3 Honors in Electrical and Computer Engineering-Honors Reading. Must be taken during the last two years of the undergraduate's career. Special approval needed from the department.

ECE496B - ECE Honors Research 496B-3 Honors in Electrical and Computer Engineering-Honors Supervised Research. Must be taken during the last two years of the undergraduate's career. Research culminating in an honors thesis for the University Honors Program. Prerequisite: ECE 496A or consent of department.

ECE497 - Neuroengineering 497-3 Neuroengineering. Fundamental topics in neuronal and neural signal generation, recording methods, and stimulation methods. Advanced understanding of how signals are generated and propagated in neurons and neuronal circuits, and applications of neuroengineering technology in medicine. Prerequisites: MATH 305 and ECE 361 with grades of C or better or consent of instructor. Concurrent enrollment allowed in ECE 361.

ECE498 - Biomedical Signal Modeling 498-3 Biomedical Signal Modeling. (Same as ECE 534, BME 536) The nature of biomedical signals. Memory and correlation. Impulse response and frequency response of biomedical signals. Modeling continuous-time and discrete-time biomedical signals. Noise removal and biomedical signal compensation. Prerequisites: MATH 305 and ECE 361 with grades of C or better or consent of instructor. Concurrent enrollment allowed in ECE 361.

ECE499 - Biomedical Optics 499-3 Biomedical Optics. This course introduces students to the rapidly growing field of biomedical optics with applications in medicine, genetics and biology. Topics include: fundamental background in modern and classic optics, principles of optical measurement in biological tissues, Monte Carlo modeling of light-tissue interaction, optics and lasers in medicine and biology, and noninvasive bio-optical imaging. Prerequisites: MATH 305 and ECE 361 with grades of C or better or consent of instructor. Concurrent enrollment allowed in ECE 361.

ECE512 - Wireless Networks 512-3 Wireless Networks. (Same as ECE 412) Compared to infrastructure based wireless communication systems, ad hoc wireless networks present several unique advantages. Thus, it has been widely studied as an important wireless communication paradigm. This graduate level course first introduces several widely adopted wireless communication technologies and then presents the concept, structure, and principles of ad hoc wireless networks. The course also introduces the details of several popular ad hoc wireless networks including mobile ad hoc networks, delay tolerant networks, wireless sensor networks, and connected vehicle networks. Novel applications in those networks will also be introduced. The course work will include paper and literature review, presentations, assignments, and a project that will enable students to be familiar with ad hoc wireless networks. NS2 will be used for student project in this course. Students can gain experience on NS2. Project-based fee: \$10 to help defray cost of equipment.

ECE513 - Digital VLSI Design 513-3 Digital VLSI Design. (Same as ECE 423) Principles of the design and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. MOS transistor theory and the CMOS technology. Characterization and performance estimation of CMOS gates, CMOS gate and circuit design. Layout and simulation using CAD tools. CMOS design of datapath subsystems. Design of finite state machines. Examples of CMOS system designs. Laboratory experience in CMOS VLSI design. Restricted to enrollment in ECE program. Project-based fee: \$35 to help defray cost of software licenses and equipment.

ECE514 - Design of Embedded Systems 514-3 Design of Embedded Systems. (Same as ECE 424) Introduction of modern embedded system application, platform architecture and software development. Principles of embedded processor architecture, operating systems and networking connectivity. Design and optimize in terms of system power, security and performance. Rapid prototyping using Intel-Atom based platform. Lecture and laboratory. Project-based fee: \$10 to help defray cost of equipment.

ECE515 - Three Dimension Integrtn Sysys 515-3 Three Dimensional Integration Systems. This course introduces the design of three dimensional VLSI integration systems, including through-silicon-via (TSV) process, characterization and modeling, 3D IC systems design, mixed signal simulation, data management, testing, process, variation, thermal and reliability challenges, as well as review of 3D system design examples. Laboratory experience in design tools (Cadence Virtuoso and Liberate, AMS simulator). Prerequisite: ECE 345 and ECE 423 with a grade of C or better. Restricted to enrollment in ECE program.

ECE516 - Implement VLSI Sysys w/HDL 516-3 Implementation of VLSI Systems with HDL. (Same as ECE 426) This course is dedicated for advanced Digital VLSI architecture and system implementation for high performance and low power digital signal processing applications. Application-specific processors and architectures to support real time processing of signal processing systems will be studied. Hands-on experience of using state-of-the-art CAD tools on designing such kind of VLSI architecture and systems. Upon completion of this course, students will entail large HDL-based implementation of a complete VLSI system. Prerequisite: ECE 327 with a grade of C or better. Project-based fee: \$35 to help defray cost of software licenses and equipment.

ECE520 - VLSI Design & Test 520-3 VLSI Design and Test Automation. (Same as ECE 425) Principles of the automated synthesis, verification, testing and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. Resource allocation and scheduling in high-level synthesis. Automation of the logic synthesis for combinational and sequential logic. The physical design automation cycle and CMOS technology considerations. Fault modeling and testing. Timing analysis. Laboratory experience using commercial tools for synthesis and layout. Prerequisite: ECE 329 with a C or better or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: \$30 to help defray cost of software licenses and equipment.

ECE521 - Fault Tolerant Comp Design 521-3 Fault-Tolerant Computer Design. Concepts of error detection, location and correction in digital systems. Codes for error detection and correction. Models and simulations of faults. Design of tests for combinatorial and sequential circuits. Testability. Design of digital systems with testability. Prerequisite: ECE 423, ECE 425 or consent of instructor. Restricted to enrollment in ECE program.

ECE522 - VLSI Circuit Testing 522-3 VLSI Circuit Testing. Theoretical and practical aspects of production testing of VLSI circuits. Relations between physical defects and fault models. Procedures for generating test inputs. Design modifications for test application and theory of built-in self-test. Prerequisite: ECE 425 or ECE 520 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: \$25 to help defray cost of software licenses.

ECE523 - Low Power VLSI Design 523-3 Low Power VLSI Design. Source of power dissipation, technology impact on power dissipation, low power circuit techniques, energy recovery, synthesis of low power circuits, low power components. Prerequisite: ECE 423 or ECE 513 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: \$35 to help defray cost of software licenses and equipment.

ECE524 - Synth/Verif Digital Circuits 524-3 Synthesis and Verification of Digital Circuits. Binary decision diagrams, finite state machines and finite automata. Design automation concepts in logic level synthesis, optimization and verification for combinational as well as sequential logic. Technology

mapping. Prerequisite: ECE 425 or ECE 520 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: \$35 to help defray cost of software licenses and equipment.

ECE525 - Adv Physical Design Automation 525-3 Advances in Physical Design Automation. Advances in the automation of VLSI layouts with emphasis on recent developments in deep submicron, FPGA and MCM technologies. Floor planning, placement, routing objectives in high performance designs using deep submicron technology. Timing analysis in the presence of crosstalk. FPGA architectures and design with dynamically reconfigurable FPGAs. Physical design automation for MCMs. Prerequisite: ECE 425 or ECE 520 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: \$35 to help defray cost of software licenses and equipment.

ECE526 - Network Process Syst Design 526-3 Network Processing Systems Design. Protocol processing, packet processing algorithms, classification and forwarding, queuing theory, switching fabrics, network processors, network systems design tradeoffs. Prerequisite: ECE 422 and ECE 429 or consent of the instructor. Restricted to enrollment in ECE program.

ECE527 - Integ Interconnection Networks 527-3 Integrated Interconnection Networks. Importance of interconnection networks and networks-on-chip (NOCs). Specifications and constraints. Topology, routing, flow control, deadlock, livelock, arbitration, allocation, performance analysis, simulation. Restricted to enrollment in ECE program.

ECE528 - Programmable ASIC Design 528-3 Programmable ASIC Design. (Same as ECE 428) Principle and practice of designing and implementing Application-Specific Integrated Circuits (ASIC). Field Programmable Gate Arrays (FPGA). Timing analysis, timing closure and managing difference clock domains in ASIC design. Complex arithmetic circuits. Digital signal processing (DSP) circuits. FPGA microprocessors. Project-based fee: \$50 to help defray cost of equipment and consumable items.

ECE529 - Computer Systems Architecture 529-3 Computer Systems Architecture. (Same as ECE 429) Principles of performance evaluation, processor microarchitecture, instruction-level parallelism, static and dynamic pipeline considerations. Superscalar processors. Multiprocessor systems. Memory hierarchy design, cache design. Mutual exclusion and synchronization mechanisms. Restricted to enrollment in ECE program.

ECE530 - Engineering Data Acquisition 530-3 Engineering Data Acquisition. (Same as ENGR 530) Theory of data acquisition and measurement systems. Criteria for selection of data acquisition hardware and software, instruments, sensors and other components of scientific and engineering experimentation. Methods for sampled data acquisition, signal conditioning, interpretation, analysis and error estimation. Restricted to enrollment in ECE program. Project-based fee: \$60 to help defray cost of software licenses and equipment.

ECE531 - Mixed-Signal VLSI Design 531-3 Mixed-Signal VLSI Design. Analysis and design of mixed-signal integrated circuits. Digital to analog converter (DAC). Analog to digital converter (ADC). Sigma-delta data converters. Performance analysis of signal chains containing both analog and digital signal processing functions. Prerequisite: ECE 446 with a minimum grade of C. Restricted enrollment in ECE program. Project-based fee: \$60 to help defray cost of software licenses and equipment.

ECE532 - Parallel Programming 532-3 Programming Parallel Processors. (Same as ECE 432) Multi-core architecture, threads, thread execution models, thread priority and scheduling, concurrency, multi-threaded programming models, synchronization, performance measurement and local balance, software tools for multi-threaded programming. Restricted to ECE students or consent of advisor. Project-based fee: \$20 to help defray cost of equipment.

ECE533 - Speech Processing 533-3 Speech Processing. (Same as BME 533, ECE 474) Fundamentals of speech production system, signal analysis of speech, speech coding, linear prediction analysis, speech synthesizing, and speech recognition algorithms. Prerequisite: MATH 305, or consent of instructor.

ECE534 - Biomedical Signal Modeling 534-3 Biomedical Signal Modeling. (Same as ECE 498, BME 536) The nature of biomedical signals. Electricity in living tissue. Biomedical signal processing and

modeling. Modeling and simulation of biomedical systems. Prerequisite: MATH 305 with a grade of C or better or consent of instructor. Project-based fee: \$20 to help defray cost of software licenses.

ECE535 - CMOS RF-IC Design 535-3 CMOS Radio-Frequency Integrated Circuit Design. (Same as ECE 440) Introduction of RF IC, passive RLC Networks, passive IC components, MOS Transistors, distributed systems, Smith Chart and S-Parameters, introduction to Band-width estimation, biasing and voltage reference, basic High Frequency Amplifiers, introduction to: noise in RF IC, Low Noise Amplifiers, Power Amplifiers, Phase-Locked Loops and Oscillators. Lecture and laboratory. Lab fee: \$35 to defray the cost of software licenses and equipment.

ECE536 - Many-Core Embedded Systems 536-3 Many-Core Embedded Systems. Advanced software concepts and techniques to develop complex software projects. Concepts and techniques include advanced dynamic memory management, cross-compilation issues, scheduling techniques and resource management.

ECE537 - Integrated Photonics 537-3 Integrated Photonics. Fundamentals of electromagnetic theory, waveguides, photonic structures including photonic crystals and integrated micro-ring resonator, numerical simulations of photonic integrated circuits using the beam propagation method, finite-difference time-domain method, rate equations, and fabrication processes. Prerequisite: ECE 441 or consent of instructor. Restricted to enrollment in ECE program.

ECE538 - Medical Instrumentation 538-3 Medical Instrumentation: Application and Design. (Same as ECE 438 and BME 538) This course introduces the students to the field of medical instrumentation. Medical instrumentation is the application of advanced engineering technology to problems in biology and medicine. The course will focus on fundamentals of instrumentation systems, sensors, amplifiers, and signal precondition. In addition, the course also includes design and applications of medical instrumentation, biopotential measurement, biosensor, biomedical signal processing, and other related topics. Prerequisite: MATH 305 with a grade of C or better, or consent of instructor. Project-based fee: \$45 to help defray cost of software licenses and equipment.

ECE539 - Diagnostic Ultrasound Physics 539-3 Diagnostic Ultrasound Physics. (Same as ECE 494 and BME 541) Diagnostic ultrasound is an ultrasound-based biomedical imaging technique used to visualize muscles, tissue, and many internal organs, to capture their size, structure and any pathological lesions. This course is an introduction to the principles and applications of biomedical ultrasound. This course will focus on fundamentals of acoustic theory, principles of ultrasonic detection and imaging, design and use of currently available tools for performance evaluation of diagnostic devices, and biological effects of ultrasound. Prerequisite: MATH 305, or consent of instructor. Project-based fee: \$30 to help defray cost of software licenses and equipment.

ECE540 - CMOS RF-IC Design II 540-3 CMOS Radio-Frequency Integrated Circuit Design II. High frequency amplifier design techniques, noise in RF IC and CMOS low noise amplifiers (LNA), mixers, oscillators, PLLs, frequency synthesizers, power amplifiers, an overview of wireless architectures. Prerequisite: ECE 440 or ECE 535 or equivalent. Lab fee: \$50 to defray the cost of software licenses and equipment.

ECE541 - Nanofabrication 541-3 Nanofabrication. Fundamentals of nanofabrication for integrated circuits, micro-electromechanical systems (MEMS), biosensors, and chemical sensors. Topics include: materials, hot processing and ion implantation, pattern transfer, thin films, and process integration. Prerequisite: PHYS 320, 328; CHEM 210; or equivalent. Restricted to enrollment in ECE program.

ECE542 - Photonics I 542-3 Photonics I. (Same as ECE 441) Ray optics, wave optics, beam optics, polarization of light, statistical optics, photons and atoms. Prerequisite: ECE 375 with a grade of C or better. Project-based fee: \$50 to help defray cost of equipment and consumable items.

ECE543 - Adv Analog IC Design 543-3 Advanced Analog Integrated Circuit Design. Analysis and design of CMOS analog integrated circuits. Circuit noise analysis. Low-voltage high-performance operational amplifiers. Voltage and current reference circuits. Integrated analog filter circuits. Micropower circuits. Prerequisite: ECE 446 or ECE 546 with a minimum grade of C or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: \$35 to help defray cost of software licenses and equipment.

ECE544 - Photonics II 544-3 Photonics II. (Same as ECE 448) Fourier optics, fiber optics, electro-optics, nonlinear optical media, acousto-optics, photonic switching, optical and interconnections and optical storage. Prerequisite: ECE 441 or consent of instructor. Project-based fee: \$80 to help defray cost of software licenses.

ECE545 - Adv Semiconductor Devices 545-3 Advanced Semiconductor Devices. Technology drivers: Moore, more Moore, and more-than-Moore. Case Study: integrated health monitoring systems. Review of solid-state theory: electronic, magnetic, optical and thermal properties of semiconductors. Energy related devices: solid-state lighting and LEDs, single-photon emitters, OLEDs, solar cells, thermoelectric devices, piezoelectric devices. Energy storage and supercapacitors. Imagers and LCDs. Sensors and detectors. Thin-film transistors (TFTs). Microwave and THz devices. Prerequisite: ECE 447 or PHYS 425 or PHYS 430 or instructor consent.

ECE546 - Analog Circuit Design 546-3 Analog Circuit Design. (Same as ECE 446) Analysis and design of electronic circuits, both discrete and integrated. Computer-aided circuit design and analysis. Design of amplifier and filter circuits. Circuit stability analysis and frequency compensation techniques. Restricted to enrollment in ECE program. Project-based fee: \$10 to help defray cost of equipment.

ECE547 - Semiconductor Devices 547-3 Semiconductor Devices. (Same as ECE 447) Semiconductor industry and Moore's law. Review of quantum mechanics of atoms. From atoms to crystals: energy bands, effective mass and density-of-states. Semiconductor statistics. Carrier transport phenomena. PN junctions. Schottky junctions. Bipolar junction transistors (BJTs). MOSFETs: capacitance-voltage and current-voltage characteristics, threshold voltage, scaling and short-channel effects, SPICE models. CMOS process integration. Basic optoelectronic devices: LEDs and solar cells. Lecture and laboratory. Prerequisite: ECE 345 or equivalent. Project-based fee: \$25 to help defray cost of software licenses.

ECE548 - Quantum Phenomena & Devices 548-3 Quantum Phenomena and Devices. Introduction: Classical Phenomena and Devices. Why Quantum Devices? Current Picture: Academia and Industry. Essential Statistical Mechanics. Essential Quantum Mechanics. Quantum Theory of Electrons: Quantization, Tunneling, Quantum Interference, Quantum Hall Effect, Scattering and Broadening, Dephasing and Shot Noise. Coulomb Blockade. Quantum Optics. Collective Phenomena and Spin. Relativistic Quantum Phenomena. Quantum Phase Transition. Quantum Computation. Prerequisite: ECE 447 or ECE 423 or ECE 446 or PHYS 425 or PHYS 430 with C or better or instructor consent.

ECE549 - Fiber Optic Communications 549-3 Fiber Optic Communications. Fundamentals of step index and graded index fiber waveguides using geometrical optics and Maxwell's equations. Other topics include design criteria, practical coupling techniques, discussion of optical sources and detectors used in light-wave communications, system examples, characterization and measurement techniques. Prerequisite: ECE 447 or ECE 448 or consent of instructor. Restricted to enrollment in ECE program.

ECE550 - Nanoelectronic Devices 550-3 Nanoelectronic Devices. Principles of semiconductor materials and devices. NanoTransistors: Charge-based devices-MOSFETs, non-ideal and quantum effects in nanoscale MOSFETs, advanced MOSFETs: trigate FETs, FinFETs, ETSOI, SiGe, Ge and III-Vs, carbon nanotubes and graphene ribbons, 2-D monolayers, nanowires, high electron mobility transistors (HEMTs), compact and SPICE models for advanced MOS devices. VLSI interconnects, parasitic elements, and reliability issues. Non-charge based devices-spinFET. Quantum devices-resonant tunnel diodes, tunnel FETs, single electron transistors (SETs). NanoMemory: EEPROM and Flash, phase change memory, electrolyte, magnetic and ferroelectric RAM, spin-torque devices, DRAM and ZRAM. Prerequisite: ECE 447 or PHYS 425 or PHYS 430 or instructor consent. Project-based fee: \$25 to help defray cost of software licenses.

ECE551 - Prob and Stochastic Processes 551-3 Probability and Stochastic Processes for Engineers. (Same as ENGR 521) Axioms of probability, random variables and vectors, joint distributions, correlation, conditional statistics, sequences of random variables, stochastic convergence, central limit theorem, stochastic processes, stationarity, ergodicity, spectral analysis, and Markov processes. Restricted to graduate student status. Restricted to enrollment in ECE program. Project-based fee: \$20 to help defray cost of software licenses.

ECE552 - Signal Detection & Estimation 552-3 Signal Detection and Estimation. Estimation theory: parameter estimation, minimum variance unbiased estimators, sufficient statistics, Cramer-Rao lower bound, best linear unbiased estimators, maximum likelihood estimators, least squares, Bayesian

estimation, maximum a posteriori estimators, minimum mean square error estimators, linear minimum mean square error estimators, Wiener filtering. Detection theory: hypothesis testing, likelihood ratios, Neyman-Pearson detection, Bayesian hypothesis testing, matched filtering, multiple hypothesis testing, sequential detection, composite hypothesis testing, uniformly most powerful tests, generalized likelihood-ratio tests. Prerequisite: ECE 551 or consent of instructor. Restricted to enrollment in ECE program.

ECE553 - Comp Network Syst Arch 553-3 Computer Network System Architecture. (Same as ECE 422) Principles of Computer Networks. Protocols and system level implementations. Socket programming, router and switching fabric architecture, security and packet classification techniques, multimedia networking and QoS. Restricted to enrollment in ECE program. Project-based fee: \$10 to help defray cost of equipment.

ECE554 - Broadband Wireless Comm 554-3 Broadband Wireless Communications. This course covers fundamentals of broadband wireless communications. Topics include concepts of space-time propagation, probabilistic modeling of space-time channel and signal models, multi-antenna (MIMO) systems, space-time coding, spatial diversity, spatial multiplexing, space-time receivers, orthogonal frequency division multiplexing (OFDM), MIMO OFDM, multi-user MIMO, performance analysis and trade-offs in MIMO channels, concepts of spread spectrum systems, frequency hopping, and direct sequence systems. Restricted to enrollment in ECE program or consent of instructor.

ECE555 - Intro to Info Theory 555-3 Introduction to Information Theory and Channel Coding. (Same as ECE 476) Entropy and Mutual Information. Channel Capacity. Gaussian Channel. Linear Block Codes. Convolutional Codes. Advance Channel Coding Techniques. Restricted to enrollment in ECE program.

ECE556 - Digital Communications 556-3 Digital Communications. Digital communication signals and systems characterization. Deterministic receiver design. Probabilistic receiver design. Error control coding. Communication over band limited channels. Prerequisite: ECE 551 or consent of the instructor. Restricted to enrollment in ECE program.

ECE557 - Computational Electronics 557-3 Computational Electronics. Elements of computational science/engineering. High-performance clusters and software tools for HPCs. Essential numerical methods. Fundamental physics and modeling of charge transport in semiconductor VLSI devices. Numerical solution of Poisson equation. Numerical solution of carrier continuity equations and terminal currents in semiconductor devices. Numerical solution of the Schrodinger equation. Electronic bandstructure calculations using the tight-banding formalism. Introduction to NEGF formalism. Commercial and non-commercial semiconductor device modeling tools. Prerequisite: ECE 447 or PHYS 425 with grades of C or better or instructor consent. Project-based fee: \$25 to help defray cost of software licenses.

ECE558 - Digital Image Processing I 558-3 Digital Image Processing I. (Same as ECE 458) Basic concepts, scope and examples of digital image processing, digital image fundamentals, image sampling and quantization, an image model, relationship between pixels, enhancement in the spatial domain, enhancement in the frequency domain, image segmentation, basics of color image processing. Special approval needed from the instructor. Restricted to enrollment in ECE program.

ECE560 - VLSI Characterization 560-3 VLSI Material and Device Characterization. Materials for modern VLSI: semiconductor crystals, tubular and monolayer materials, organic materials, heterostructures, wafers and notations. Nanoscale fabrication processes: IC production flow, selective doping, nanolithography, etching, contacts and interconnects, spontaneous formation and ordering of nanostructures, fabrication of MEMS/NEMS systems, IC assembly and packaging. VLSI device characterization: electrical CV and IV profiling, defect characterization using DLTS, carrier mobility and lifetime measurements, optical microscopy and spectroscopy, particle beam and X-ray techniques. Reliability of devices and ICs: harsh environments, hot carriers, NBTI, electromigration, electrostatic discharge, IC power dissipation and cooling. Prerequisite: ECE 447 or ECE 423 or PHYS 425 with a grade of C or better or instructor consent.

ECE561 - Mechatronics/Embedded Control 561-3 Mechatronics and Embedded Control. (Same as ECE 456) Components of mechatronics systems, mathematical modeling, system identification, numerical tools for design and analysis, single-loop controller design, embedded systems, data

acquisition and signal conditioning, sensors, actuators, networked control. This course includes lab session. Lab fee: \$35 to help defray the cost of software licenses.

ECE562 - Microwave Engineering I 562-3 Microwave Engineering I. (Same as ECE 479)

Electromagnetic theory, analysis, design, fabrication, measurement and CAD applied to passive networks at microwave frequencies. Topics include: Transmission lines, Waveguides, Impedance matching, Tuning, Resonators, Scattering parameters, the Smith Chart. Lecture and Laboratory. Prerequisite: ECE 375 or equivalent. Restricted to enrollment in ECE program. Project-based fee: \$100 to help defray cost of software licenses.

ECE564 - Optimal Control 564-3 Optimal Control. Optimization techniques for linear and nonlinear systems. Variational calculus. Dynamic programming. Pontryagin's maximum principle. Hamilton-Jacobi theory. Linear regulator. Bang Bang control, minimum time control, singular control. Discrete variational calculus. Combined estimation and control. Computational methods in optimal control. Prerequisite: ECE 456 or consent of instructor. Restricted to enrollment in ECE program.

ECE565 - Nonlinear Control Systems 565-3 Nonlinear Control Systems. Analysis and design of nonlinear dynamical systems. Topics include: nonlinear differential equations, stability, Lyapunov stability analysis, stability of perturbed systems, linearization, and central manifold theorem. Stabilization, feedback linearization, and controller design methods such as backstepping and sliding mode control.

ECE566 - Linear Systems Theory 566-3 Linear Systems Theory. Introduction to the structure and analysis of linear dynamical systems in time domain. Linear algebra review, solutions of linear differential equations, state-space representations, state transition matrix, and time varying systems. Introduction to fundamental mathematics of linear spaces and linear operator theory. Structural properties of linear systems such as controllability, observability, and stability. Design and synthesis of controllers and state observers for linear systems. Linear quadratic regulatory theory and Kalman filter.

ECE567 - Modern Biomedical Imaging 567-3 Modern Biomedical Imaging. (Same as ECE 467 and BME 532) Modern biomedical imaging. Diagnostic x-ray projection imaging. Tomographic imaging. Ultrasound imaging and therapy. Magnetic resonance imaging (MRI). Signal and noise characteristics. Image quality evaluation. Three-dimensional image reconstruction algorithms. Prerequisite: ECE 355 or consent of instructor. Restricted to enrollment in ECE program. Project-based fee: \$30 to help defray cost of software licenses and equipment.

ECE568 - Pattern Classification 568-3 Pattern Classification. Classification models, discriminant functions, decision surfaces, generalized linear discriminant functions, parameter estimation, problems of dimensionality, component analysis, Fisher discriminant analysis, hidden Markov models, nearest neighbor rules, classification trees, string matching, resampling for classifier design and evaluation, clustering algorithms, projects. Special approval needed from the instructor. Restricted to enrollment in ECE program.

ECE569 - Biomedical Instrumentation 569-3 Biomedical Instrumentation. (Same as BME 538) Basic concept of Medical instrumentation, basic sensors and principles, amplifiers, biopotential electrodes, blood pressure and sound, measurement of respiratory system, chemical biosensors, Cellular measurements, Nervous system measurements, magnetic resonance imaging. Prerequisites: PHSL 410A or CHEM 444 or consent of instructor. Restricted to enrollment in ECE program. Lab fee: \$45 to help defray cost of software licenses and equipment.

ECE570 - Communication Systems 570-3 Principles of Communication Systems. (Same as ECE 478) This course covers principles of communication systems. Topics include (1) representation of signals and systems, (2) amplitude modulation, (3) angle modulation, (4) probability theory and random processes for communication system designs, (5) transition from analog to digital and pulse code/delta modulation, (6) baseband digital transmission, (7) digital band-pass transmission techniques, (8) introduction to information theory and coding, (9) wireless channel modeling, (10) cellular systems and performance analysis. Lectures and laboratory projects. Prerequisites: ECE 315 and ECE 355 or consent of instructor. Restricted to enrollment in ECE program or consent of instructor.

ECE571 - Advanced Wireless Comm 571-3 Advanced Wireless Communication. This course covers advanced topics in wireless communications. Topics include wireless system architectures, wireless channel modeling, cellular systems and co-channel interference, advanced digital modulation and

multiple-access techniques, massive MIMO, mm-wave communications, performance analysis, radio resource allocation and optimization, wireless physical layer security, enabling technologies for 5G. Restricted to enrollment in ECE program or consent of instructor. Project-based fee: \$20 to help defray cost of software licenses.

ECE572 - Neural Networks 572-3 Neural Networks. Anatomy and physiology of the cerebral cortex. Feed-forward Networks, Linear Associator, Multilayer Perceptrons. Feedback Networks, Hopfield Networks, ART. Applications to pattern recognition, robotics and speech processing. Optical and electronic implementations. Prerequisite: MATH 305 or consent of instructor. Restricted to enrollment in ECE program.

ECE573 - Fields and Waves II 573-3 Field and Waves II. Time-harmonic electromagnetic fields in dielectric and lossy media, transmission lines, antennas and resonators. Techniques include duality, image theory, reciprocity and integral equations. Boundary value problems solved for several frequently encountered symmetries. Prerequisite: ECE 477. Restricted to enrollment in ECE program.

ECE574 - Nonlinear Optics 574-3 Nonlinear Optics. Coupled-mode-analysis applied to nonlinear wave interactions, harmonic generation, parametric amplification, backward wave amplifiers, backward oscillation in laser systems, phase conjugation and multiple-wave mixing systems, Pockel and Kerr effects, and electro-optical modulations in optical communication systems. Prerequisite: ECE 375 or consent of instructor. Restricted to enrollment in ECE program.

ECE575 - Antennas I 575-3 Antennas I. (Same as ECE 472) Analysis, design, fabrication, measurement and CAD applied to basic antenna types. Fundamental parameters. Friis transmission equation. Impedance and pattern measurements. Resonant microstrip and wire antennas. Arrays and line sources. Lecture and laboratory. Prerequisite: ECE 375 or equivalent. Restricted to enrollment in ECE program. Project-based fee: \$120 to help defray cost of software licenses.

ECE576 - Numeric Electromagnetics 576-3 Numerical Electromagnetics. Numerical solution of electromagnetic problems by methods that include finite element, integral equation, moment, spectral domain and finite difference. Examination of electromagnetic problems and their solutions in current literature. Prerequisite: ECE 573. Restricted to enrollment in ECE program.

ECE577 - Antennas II 577-3 Antennas II. Analysis, design and CAD of antennas. Numerical methods. Broadband, traveling-wave, frequency independent, electrically-small, aperture and microstrip antenna types. Prerequisite: ECE 472. Restricted to enrollment in ECE program.

ECE578 - DIP II 578-3 Digital Image Processing II. Full-color image processing, image noise and degradation models, image restoration, inverse filtering, Wiener filtering, geometric transformations, image compression models, error-free compression, lossy compression, compression standards, dilation and erosion, opening and closing operations, morphological filtering, boundary descriptors, regional descriptors, principal components, vision-based pattern recognition. Prerequisite: ECE 558. Restricted to enrollment in ECE program.

ECE579 - Microwave Engineering II 579-3 Microwave Engineering II. Analysis and design of passive and active devices at microwave frequencies. Topics include: power dividers, couplers, filters, ferrite devices, noise, noise effects in detectors, mixers, modulators, amplifier and oscillator design, and an introduction to microwave systems. Prerequisite: ECE 479. Restricted to enrollment in ECE program.

ECE580 - Seminar 580-1 Seminar. Study and formal presentation by students of selected research in electrical and computer engineering. Restricted to students in the graduate program in Electrical and Computer Engineering. Special approval needed from the instructor.

ECE581 - Wind & Solar Power Systems 581-3 Wind and Solar Energy Power Systems. (Same as ECE 481) The course introduces students to wind and solar energy power systems. Planning of wind generation; and operation of wind generators, mechanical and electrical design, power conditioning, control and protection. Planning, operation and design of electric solar plants; power conditioning, control and protection.

ECE582 - Power Converter Design 582-3 Power Converter Design and Control. (Same as ECE 482) This course covers all the steps required for designing an actual power converter or electric drive system.

The power stage design considerations, gate drive circuits, isolated high voltage/current measuring circuits, and application of a Texas Instrument Digital Signal Processor (DSP) for implementing different control schemes are discussed in detail. A brief introduction about the digital control theory and implementation of digital controller transfer functions using the DSP are provided as well. Project-based fee: \$65 to help defray cost of software licenses and equipment.

ECE583 - Electric Drive Systems 583-3 Electric Drive Systems. (Same as ECE 483) Course content is roughly 1/3 power electronics, 1/3 applied control and 1/3 electric machinery and focuses on analysis, simulation, and control design of electric drive based speed, torque, and position control systems. Advanced topics depending on the semester are taught. Project-based fee: \$65 to help defray cost of software licenses and equipment.

ECE584 - Electric and Hybrid Vehicles 584-3 Electric and Hybrid Vehicles. (Same as ECE 484) This course covers an entire range of topics related to analysis, design, control, and optimization of electric, hybrid, and plug-in hybrid power trains including automotive applications of adjustable speed motor drives, energy storage systems, and advanced power converters. Restricted to enrollment in ECE program or consent of the instructor. Lab fee: \$65 to help defray cost of software licenses and equipment.

ECE585 - Pwr Sys Stability & Control 585-3 Power Systems Stability and Control. Fundamentals of power system stability, synchronous machine modeling and simulation, transient and small signal stability, control and protection, power system stabilizers, voltage stability, voltage collapse, concepts and devices of flexible ac transmission, mid-term and long-term stability.

ECE586 - Power System Methods 586-3 Computational Methods in Power Systems. The course covers advanced methods for the computation and analysis of power systems. Topics: circuit graph theory and network matrices, computation of electromagnetic transients, computation of power flows and faults, computation of system stability, stochastic methods in power systems, load forecasting, state estimation, unit dispatch. The course uses power system software. Lecture. Restricted to enrollment in the ECE program.

ECE587 - Modern Power Systems Op 587-3 Modern Power Systems Operation. This course provides students with a comprehensive picture of the techniques used in modern power systems operation. The course introduces central "terminal" characteristics for thermal and hydroelectric power generation systems, along with new optimization techniques for tackling "real-world" power systems operating problems. The topics include: analysis of different bidding strategies in competitive electricity markets, prediction of load and price, analysis of power systems security, different methods of optimal power flow, analysis of power systems uncertainty and reliability, economic dispatch, and unit commitment analysis. Project-based fee: \$65 to help defray cost of software licenses and equipment.

ECE588 - Power System Engineering 588-3 Power System Engineering. (Same as ECE 488) The course covers topics involving the design and operation of a power system. Topics: symmetrical and unsymmetrical power system faults, power system protection design, transient stability of power generators, power system economic operation, power system control, transient operation of transmission lines. The course uses power system software. Lecture.

ECE589 - Electric Power Distribution 589-3 Electric Power Distribution. (Same as ECE 489) Design of primary and secondary distribution networks. Load characteristics. Voltage regulation. Metering techniques and systems. Protection of distribution systems. Special topics related to power distribution. Prerequisite: ECE 235.

ECE592 - Special Investigations 592-1 to 3 Special Investigations in Electrical Engineering. Individual advanced projects and problems selected by student or instructor. Restricted to graduate standing. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593A - Adv Topics ECE Antennas/Propag 593A-1-3 Advanced Topics in Electrical Engineering-Antennas and Propagation. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593B - Adv Topics ECE-ASIC Design 593B-1-3 Advanced Topics in Electrical Engineering-ASIC Design. Lectures on advanced topics of special interest to students in various areas of Electrical &

Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593C - Adv Topics ECE-Communications 593C-1-3 Advanced Topics in Electrical Engineering-Communications. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593D - Adv Topics ECE-Comp Architect 593D-1-3 Advanced Topics in Electrical Engineering-Computer Architecture. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593E - Adv Topics ECE-Control Systems 593E-1-3 Advanced Topics in Electrical Engineering-Control Systems. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593F - Adv Topics ECE-Design Automatn 593F-1-3 Advanced Topics in Electrical Engineering-Design Automation. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593G - Adv Topics ECE-Digital Design 593G-1-3 Advanced Topics in Electrical Engineering-Digital Design. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593H - Adv Topics-Digital Test/Verify 593H-1-3 Advanced Topics in Electrical Engineering-Digital Testing and Verification. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593I - Adv Topics ECE-Elec Flds/Waves 593I-1-3 Advanced Topics in Electrical Engineering-Electromagnetic Fields and Waves. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593J - Adv Topics ECE-Embedded System 593J-1-3 Advanced Topics in Electrical Engineering-Embedded Systems. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593K - Adv Topics ECE-Medical Imaging 593K-1-3 Advanced Topics in Electrical Engineering-Medical Imaging. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593L - Adv Topics ECE-Mix Signal Test 593L-1-3 Advanced Topics in Electrical Engineering-Mixed-Signal Testing and Design. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593M - Adv Topics ECE-Nanotechnology 593M-1-3 Advanced Topics in Electrical Engineering-Nanotechnology. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593N - Adv Topics ECE-Network Systems 593N-1-3 Advanced Topics in Electrical Engineering-Network Systems. Lectures on advanced topics of special interest to students in various areas of

Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593O - Adv Topics ECE-Photonics 593O-1-3 Advanced Topics in Electrical Engineering-Photonics. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593P - Adv Topics ECE-Phys Des Automt 593P-1-3 Advanced Topics in Electrical Engineering-Physical Design Automation. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593Q - Adv Topics ECE-Pwr Elec Conv 593Q-1-3 Advanced Topics in Electrical Engineering-Power Electronic Converters and Drive Systems. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593R - Adv Topics ECE-Power Quality 593R-1-3 Advanced Topics in Electrical Engineering-Power Quality. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593S - Adv Topics ECE-Pwr Sys Con/Pro 593S-1-3 Advanced Topics in Electrical Engineering-Power System Control and Protection. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593T - Adv Topics ECE-Renewbl Energy 593T-1-3 Advanced Topics in Electrical Engineering-Renewable Energy. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593U - Adv Topics ECE-RF/M'Wave Syst 593U-1-3 Advanced Topics in Electrical Engineering-RF and Microwave Systems. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593V - Adv Topics ECE-Signal Process 593V-1-3 Advanced Topics in Electrical Engineering-Signal Processing. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593W - Adv Topics ECE-Software Engr 593W-1-3 Advanced Topics in Electrical Engineering-Software Engineering. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE593X - Adv Topics ECE-Wireless System 593X-1-3 Advanced Topics in Electrical Engineering-Wireless Systems. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in ECE. Restricted to enrollment in ECE program. Special approval needed from the instructor.

ECE595 - Communication Skills 595-3 Communication Skills for Engineering Graduate Students. This course prepares graduate engineering students to communicate technical information to various audiences and for various purposes. Principles and strategies are applied to theses, dissertations, scholarly presentations, and other engineering documents such as lab reports, user manuals, business correspondences, job application materials, and engineering ethics. Research tools and software programs prepare students to deliver oral presentations on current engineering topics. Restricted

to graduate standing. Does not count toward the hours required for graduation in the ECE program. Restricted to enrollment in ECE program.

ECE596 - Intro to BME 596-3 Introduction to Biomedical Engineering. (Same as BME 596) Principles of biomechanics, biomaterials, electrophysiology, modeling, instrumentation, biosignal processing, medical imaging, and biomedical optics. Professional moral and ethical issues in biomedical research and development. Prerequisite: MATH 305, or consent of instructor.

ECE597 - Biomedical Research Ethics 597-1 Biomedical Research Ethics. (Same as BME 597) Series of lectures from distinguished speakers, from academia, industry and government, regarding ethical issues associated with biomedical research and development. Graded S/U or DEF only. Restricted to: Enrollment in BME or ECE program. Does not count toward the hours required for graduation in the ECE program.

ECE599 - Thesis 599-1 to 6 Thesis.

ECE600 - Doctoral Dissertation 600-1 to 24 (1 to 16 per semester) Doctoral Dissertation. Dissertation research. Hours and credit to be arranged by director of graduate studies. Graded S/U only. Restricted to Admission to PhD program in Electrical and Computer Engineering.

ECE601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Electrical and Computer Engineering Faculty

Ahmed, Shaikh, Professor, Ph.D., Arizona State University, 2005.
Anagnostopoulous, Iraklis, Assistant Professor, Ph.D., National Technical University of Athens, 2014.
Aruma Baduge, Gayan, Assistant Professor, Ph.D., University of Alberta, 2013, 2016.
Asrari, Arash, Assistant Professor, Ph.D., University of Central Florida, 2015.
Botros, Nazeih, Professor, Emeritus, Ph.D., University of Oklahoma, 1985.
Brown, David P., Professor, Emeritus, Ph.D., Michigan State University, 1961.
Chen, Kang, Assistant Professor, Ph.D., Clemson University, 2014.
Chen, Ying, Associate Professor, Ph.D., Duke University, 2007.
Daneshdoost, Morteza, Professor, Emeritus, Ph.D., Drexel University, 1984.
Galanos, Glafkos, Professor, Emeritus, University of Manchester, England, 1970.
Gupta, Lalit, Professor, Ph.D., Southern Methodist University, 1986.
Haniotakis, Themistoklis, Associate Professor, Ph.D., University of Athens, 1998.
Harackiewicz, Frances J., Professor, University of Massachusetts at Amherst, 1990.
Hatziaodoniu, C., Professor, Ph.D., West Virginia University, 1988.
Kagaris, Dimitrios N., Professor, Ph.D., Dartmouth College, 1994.
Komae, Arash, Assistant Professor, Ph.D., University of Maryland, College Park, 2008.
Lu, Chao, Assistant Professor, Ph.D., Purdue University, 2012.
Osborne, William P., Professor, Emeritus, Ph.D., New Mexico State University, 1970.
Phegley, James, Senior Lecturer, Ph.D., Southern Illinois University, 2001.
Pourboghrat, Farzad, Professor, Emeritus, Ph.D., University of Iowa, 1984.
Qin, Jun, Assistant Professor, Ph.D., Duke University, 2008.
Sayeh, Mohammad, Professor, Ph.D., Oklahoma State University, 1985.
Singh-Gupta, Vidya, Senior Lecturer, Ph.D., Southern Illinois University, 1988.
Smith, James G., Professor, Emeritus, Ph.D., University of Missouri at Rolla, 1967.
Tragoudas, Spyros, Professor and Chair, Ph.D., University of Texas, Dallas, 1991.
Viswanathan, R., Professor, Emeritus, Ph.D., Southern Methodist University, 1983.
Wang, Haibo, Professor, Ph.D., University of Arizona, 2002.
Weng, Ning, Associate Professor, Ph.D., University of Massachusetts, 2005.

Economics

The study of economics examines how entities from individuals to nations allocate resources to achieve objectives congruent with their desires and interests. A strong economics background can help one better predict movements in stock markets, achieve a balance between economic policy and environmental goals, recognize the costs and benefits of increased globalization including international trade, and predict how different government policies influence the business cycle.

Economic forces have had powerful effects throughout world history and so a strong background within economics can greatly increase one's understanding of the world today. Moreover, economics helps develop analytical abilities and skills such as forecasting market trends and managing financial portfolios that are attractive to a wide range of employers in both the private and public sectors. Obtaining an economics major is also beneficial to those who enter graduate programs in business, law, or any of the social sciences.

Within the major, students can specialize in different fields, including international economics, and financial economics. Both areas are rapidly increasing in importance as the world becomes more interdependent and as more people hold financial portfolios. Students specializing in general economics can also tailor a program to meet their specific interests through consultation with one of the undergraduate advisors in the department.

After meeting the requirements of the economics major and those of the College of Liberal Arts, students still have 35 hours of electives outside the department. This flexibility allows students to augment their economic training with courses that meet particular interests in areas such as business, political science, or journalism. Students can thus combine their economics degree with other disciplines so as to pursue a wide range of careers and interests.

The requirements for an economics major are given below. Economics courses at the 300-level generally require only introductory economics (ECON 240 or ECON 241) whereas those at the 400-level are more sophisticated treatments building upon ECON 340 or ECON 341. Courses taken for a pass/fail grade will not be counted toward the major without the written consent of the director of undergraduate studies within the economics department. Transfer students can receive credit towards the major from equivalent economics courses at other institutions. However, at least five economics courses must be taken at Southern Illinois University Carbondale.

Students are highly encouraged to discuss their major programs and career goals with a professor within the department. Undergraduates considering graduate economics programs should meet with a professor as soon as possible in order to adequately prepare for the economics and mathematical rigor of these graduate programs.

Bachelor of Arts Degree in Economics, College of Liberal Arts

Economics Major - General

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	14
Economics Requirements	30
Foundation courses: ECON 240, ECON 241, ECON 308, ECON 340, ECON 341	15
Five electives: chosen in consultation with major advisor	15

Degree Requirements	Credit Hours
Electives	35
Total	120

Economics Major - Financial Economics Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	14
Financial Economics Specialization Requirements	30
Foundational courses: ECON 240, ECON 241, ECON 308, ECON 340, ECON 341	15
Specialized courses: ECON 315 or FIN 330, and ECON 416	6
Three electives: chosen in consultation with major advisor	9
Electives	35
Total	120

Economics Major - International Economics Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	14
International Economics Specialization Requirements	30
Foundational courses: ECON 240, ECON 241, ECON 308, ECON 340, ECON 341	15
Specialized courses: ECON 329 and ECON 429	6
Three electives: chosen in consultation with major advisor	9
Electives	35
Total	120

Economics Major - Law and Economics Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	14
Law and Economics Specialization Requirements	30
Foundation courses: ECON 240, ECON 241, ECON 308, ECON 340, ECON 341	15
Specialized courses: ECON 302I and ECON 350	6
Three electives: chosen in consultation with major advisor	9
Electives	35
Total	120

Department Honors Program

Juniors and seniors who are economics majors and working toward a Bachelor of Arts degree in the College of Liberal Arts may choose to enter the Departmental Honors Program. To receive departmental honors, a student must have a GPA in Economics of 3.5 or better AND: a) Complete six hours of ECON 443, Honors Research in Economics, with a grade of B or better OR b) Complete six hours of 400-level coursework within the economics department with a grade of B or better in each course. Moreover, for each of these courses the student must complete an assignment beyond that of the regular coursework asked of non-Honors students. An outline of this assignment must receive the written consent of both the instructor and the department chair for the assignment to be approved as fulfilling the requirements of the Honors Program. Successful completion of the department's honors program is noted on the diploma and the transcript. Students receiving credit for ECON 443 may not apply ECON 301 hours toward the major. Concurrent participation in the University Honors Program is encouraged.

Economics Minor

For students majoring in other departments, a minor in economics is useful for employment in business or government and for graduate work in any of the social sciences, law, or business. A minor requires 15 hours of economics courses, including both ECON 240 and ECON 241. ECON 301 cannot be counted towards the minor. Students must obtain at least a 2.0 grade point average in the 15 hours of coursework counted towards the minor. Transfer students must take at least three economics courses at Southern Illinois University Carbondale.

Bachelor's and Accelerated Master's Track

Economics majors can enter an accelerated Bachelor's-Master's program in which specific courses satisfy requirements in both degrees allowing for completion of the master's in just one year after the B.A. To enter this program, students apply through the Department of Economics during their junior year and must have at least a 3.25 GPA in all coursework. Please see the Director of Graduate Studies in the Economics Department for more information.

Economics Courses

ECON113 - Econ of Contemp Social Issues 113-3 Economics of Contemporary Social Issues.

(University Core Curriculum) The purpose of this course is to examine a number of major social issues from an economics perspective. Thus the student will be taught some basic economic concepts (tool kit) which will then be used to analyze a variety of social problems. The emphasis will be on policy. Once the causes of social problems have been analyzed, then specific policies effective in solving or dealing with the social problem will be discussed. Only one of the courses, Economics 113 or Economics 114, can count among those economics courses required for an economics major or minor.

ECON240 - Intro To Microeconomics 240-3 Introduction to Microeconomics. (Advanced University Core Curriculum course) [IAI Course: S3 902] Study of businesses, consumers, and the government and their effects on prices, output and income distribution. Current economic problems will be used as illustrative examples. Prerequisite: satisfaction of the University Core Curriculum mathematics requirement. Satisfies the University Core Curriculum Social Science requirement in lieu of Economics 113.

ECON241 - Intro To Macroeconomics 241-3 Introduction to Macroeconomics. (Advanced University Core Curriculum course) [IAI Course: S3 901] Determination of income, employment, output and price levels in the national economy; government taxation, expenditure, and monetary policies to solve problems such as inflation and unemployment. Prerequisite: satisfaction of the University Core Curriculum mathematics requirement. Satisfies the University Core Curriculum Social Science requirement in lieu of Economics 113.

ECON301 - Economic Readings 301-1 to 6 Economic Readings. Readings in books and periodicals in a defined field, under direction of one or more faculty members. Periodic written and oral reports. No more than three credit hours of 301 may be counted as part of the 30 credit hour economics requirements for economics majors. Special approval needed from the instructor and department chair.

ECON302I - Hist & Phil-World's Econ Syst 302I-3 History and Philosophy of the World's Economic Systems. (University Core Curriculum) An investigation into how economic systems coexist with, and determine, or are determined by, the political and social structures in internationally diverse countries. Utilizing both economic concepts and an institutional approach the evolution of systems in nations such as Russia, Japan, the United States, China and others will be explored.

ECON303 - Poverty and the Economy 303-3 Poverty and the Economy. Poverty as a study of income inequality. Economic determinants of income inequality are isolated and related to current policy proposals.

ECON308 - Econ and Business Stats 308-3 Economics and Business Statistics. An examination of the research methods and data analysis techniques used by economists in their analysis of economics questions and problems including the principal statistical methods used in economic and business decision making. This course satisfies the CoLA Writing-Across-the-Curriculum requirement.

ECON310 - Labor Problems 310-3 Labor Problems. A comprehensive overview of the relation of labor to the United States economy. Included are the history of labor in the United States; analysis of institutions affecting labor; the theory of wage and employment determination; as well as analyses of unions and collective bargaining, discrimination, unemployment, and the distribution of income. Prerequisite: ECON 240 or consent of instructor.

ECON315 - Money & Banking 315-3 Money and Banking. Study of the operation of the money and banking system in the United States. Stresses Federal Reserve control of the money supply and credit conditions to combat inflation and unemployment and the operation of the commercial bank operating as a firm within the Federal Reserve System. Policy issues are examined for the regulation of the banking industry as well as for the control of the domestic money supply. Prerequisite: ECON 241 or consent of instructor.

ECON322 - Intro Economic Development 322-3 Introduction to Economic Development. An analysis of the preconditions, processes, and problems involved in economic development. Both the theory and

policy relevant to development, with special emphasis on the developing or emerging economies, are stressed. Prerequisite: ECON 240 and 241 or consent of instructor.

ECON325 - Economies of Transition 325-3 Economics of Transition. This course is a survey of the problems confronting former socialist economies making a transition to a market economy. We focus primarily on the case of countries in Eastern Europe and on Russia. Students will learn to apply economic principles to understand the costs and benefits of policies including gradual versus rapid reform, price liberalization, privatization, federalist arrangements and stabilization. Prerequisite: ECON 240 and 241 or consent of instructor.

ECON329 - Intro International Economics 329-3 Introduction to International Economics. Introduction to the principles of international economics. Stresses the relationship between the balance of payments and the United States economy, the determinants of deficits and surpluses, and policy options to correct an imbalance. Prerequisite: ECON 240 and 241 or consent of instructor.

ECON330 - Public Finance 330-3 Public Finance. Effects of government spending and taxing activities on the rest of the economy. Analysis of government debt, the federal budgetary process, and various taxes used in the United States. Prerequisite: ECON 240 or consent of instructor.

ECON333 - Econ of the Environment 333-3 Economics of the Environment. Factors which lead to physical and human deterioration in a market economy. Consideration of solutions to such problems as urban decay, overpopulation, and pollution. Prerequisite: ECON 240 or 241 or consent of instructor.

ECON334 - Health Economics 334-3 Health Economics. Factors underlying the demand for and supply of health and medical care services. Included are the market, voluntary nonprofit, and governmental sectors of the industry. Special topics are the regional coordination of hospital facilities and services, the consumer price index and the measurement and costs of control programs. Prerequisite: ECON 240 or consent of instructor.

ECON340 - Intermediate Microeconomics 340-3 Intermediate Microeconomics. A survey of theories of household, firm, and government economic behavior in the determination of competitive and non-competitive market prices. Emphasis is on understanding the United States economic system and on evaluating existing and proposed government microeconomic policies designed to improve the system. Not open to students who have had Economics 440. Prerequisite: ECON 240 or consent of instructor.

ECON341 - Intermediate Macroeconomics 341-3 Intermediate Macroeconomics. The determinants of fluctuations in aggregate economic activity, unemployment and inflation. An analysis of the behavior of consumption and investment, the impact of government monetary and fiscal policies, and factors affecting the rate of economic growth. Not open to students who have had Economics 441. Prerequisite: ECON 241 or consent of instructor.

ECON350 - Law and Economics 350-3 Law and Economics. The application of economics to the study of legal rules and institutions with an emphasis on how legal rules influence individual behavior and a discussion of whether such rules and resulting behavior are efficient and/or equitable. Applications from property, contract, tort, and criminal law will be used. Prerequisite: ECON 240 or consent of instructor.

ECON370 - Pacific Rim Economies 370-3 Pacific Rim Economies. This course offers an overview of the development process, and the associated successes and failures of Pacific Rim economies during the latter half of the Twentieth Century. The course explores the forces underlying the causes and consequences of these changes, with particular emphasis on the role of the state, along with the interdependence of the financial and the real sectors, as evidenced by recent financial crises in East Asia. Prerequisite: ECON 240 and 241, or consent of instructor.

ECON374 - Industrial Organization 374-3 Industrial Organization. A survey of economic theories and empirical studies on the nature and consequences of business rivalry in imperfectly competitive markets. Includes such topics as oligopoly, economics of scale, natural monopoly, introductory game theory, advertising, imperfect information, spatial competition, patents, and innovation. Prerequisite: ECON 240.

ECON399 - Internship in Economics 399-3 Internship in Economics. Internship constitutes paid or unpaid work in a firm, organization, or government office applying economic principles learned in class to real world experiences. Only one internship counted towards the economics major. Grades determined by

periodic written reports. Prerequisite: successful completion of ECON 240, 241 and six additional credit hours of economics at SIUC; declared major in economics; and written approval from the Economics department.

ECON400 - Contemporary Econ Problems 400-3 Contemporary Economic Problems. A study of one or more contemporary economic problems. Problems chosen vary from semester to semester. Topics will be announced in advance. Not for graduate credit. Restricted to senior status and economics major.

ECON408 - Research Methods in Economics 408-3 Research Methods in Economics. A continuation of 308 which includes the construction, interpretation, and use of economic data. Topics include correlation, regression, decision making, index numbers, time series analysis, forecasting, and other statistical techniques used in analyzing economic and business data. This course will not count as graduate credit for economics majors. Not for graduate credit. Prerequisite: ECON 308 or equivalent.

ECON416 - Financial Economics 416-3 Financial Economics. Study the role of money within the financial system, and the role of the financial system itself in providing risk-sharing, liquidity and information services. An examination of the bond market, interest rates and the concepts of risk, liquidity, information costs, taxation and investment maturity. A detailed examination of financial markets, e.g., the markets for stocks, foreign exchange, and market for financial derivatives. Finally, a more detailed account of why and how financial institutions and instruments evolve. Prerequisite: ECON 315 or 341 or consent of instructor.

ECON419 - Latin American Econ Developmt 419-3 Latin American Economic Development. Special attention to contemporary policy issues and alternative strategies for development. Among the topics included are inflation and financial reform, international trade and economic integration, foreign investment, and agrarian reform. Prerequisite: ECON 322, or 340, or 341, or consent of instructor.

ECON429 - International Trade & Finance 429-3 International Trade and Finance. Analysis of the pattern and volume of world trade and capital flows; effects of trade and payments on the domestic economy; problems and methods of adjusting to change in the balance of payments. Prerequisite: ECON 340 and 341 or consent of instructor.

ECON431 - Public Finance II 431-3 Public Finance II. State and local. Analysis of the economic effects, problems, and alternative solutions concerning state and local government expenditures, revenues, and debt. Prerequisite: ECON 330 or 340 or 341 or consent of instructor.

ECON440 - Price Output & Allocatn Theory 440-3 Price, Output, and Allocation Theories. A systematic survey of theories of product prices, wage rates, rates of production and resource utilization under conditions of competition, monopolistic competition, oligopoly and monopoly markets. Emphasis is on developing analytical tools useful in the social sciences. Not open to students who have had Economics 340. Prerequisite: ECON 240 or consent of instructor.

ECON441 - Contemporary Macroecon Theory 441-3 Contemporary Macroeconomic Theory. An examination in the causes of inflation, unemployment, and fluctuations in aggregate economic activity, factors affecting consumption and investment, and the sources of economic growth. Emphasis is on understanding contemporary United States macroeconomic problems and the options for fiscal, monetary and income policies facing the United States government. Not open to students who have had 341. Prerequisite: ECON 241 or consent of instructor.

ECON443 - Honors Research in Economics 443-3 Honors Research in Economics. Individual research for honors students in economics; student must be a junior or senior with a grade point average of 3.25 or better, overall and in the major. For undergraduate credit only. Not for graduate credit. Prerequisite: Mathematics 140, 150 or equivalent. Special approval needed from the departmental chair and a faculty supervisor.

ECON450 - History of Economic Thought 450-3 History of Economic Thought. An analytical study of the development of economic ideas, with special reference to historical and societal context, central thrust, and impact. Such benchmark figures as Smith, Marx, Marshall, Veblen, and Keynes are highlighted and major schools of economic thought are identified. Prerequisite: ECON 240 and 241; or 113; or consent of instructor.

ECON463 - Intro to Applied Econometrics 463-3 Introduction to Applied Econometrics. Applications of statistical tools to specific economic problems. Numerous examples will be examined in order to achieve this goal. Emphasis will be given to model misspecification, non-classical estimation techniques, data analysis, and simultaneous equations. Prerequisite: ECON 308 or equivalent or consent of instructor.

ECON465 - Mathematical Economics I 465-4 Mathematical Economics I. A systematic survey of the fundamental mathematical tools for economic analysis. Topics include functions and their properties, including derivatives and integrals. The focus is on calculus techniques for optimization and comparative statics analysis. Prerequisite: ECON 340 or 440, and MATH 140 or consent of instructor.

ECON474 - Econ Strategies for Business 474-3 Economic Strategies for Business. This course will be concerned with broad principles of microeconomics that underlie all business decision-making. The main topics discussed may include the firm's costs, pricing and research and development decisions under different market structures, price discrimination, strategies of different business practices, information, advertising, decision-making over time, and decision-making under symmetric information. Prerequisite: ECON 240 or its equivalent or consent of instructor.

ECON479 - Problems in Bus & Econ 479-3 Problems in Business and Economics. Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting are analyzed from a policy standpoint. Prerequisite: ECON 240, 308 or consent of instructor.

ECON500 - Economics Seminar 500-3 to 24 (3 per topic) Economics Seminar. A study of a common, general topic in the field of economics with individual reports on special topics. Special approval needed from the instructor.

ECON501 - Economics Readings 501-1 to 21 Economics Readings. Readings from books and periodicals in economics. Master's degree students limited to a total of six hours. Special approval needed from the instructor and chair.

ECON502 - Readings: Resource Econ 502-1 to 4 Readings in Resource Economics. (See FOR 590).

ECON507 - Practicum:Undergrad Teaching 507-1 to 4 (1,1,1,1) Practicum in Undergraduate Teaching. Emphasizes teaching methods, source materials, and preparation of classroom materials. All teaching assistants must enroll. One hour of credit per semester. Graded S/U only.

ECON510 - Res: Design, Methodlgy, Presnt 510-2 Research in Economics: Design, Methodology and Presentation. Systematic approach to economic research. Includes research planning and design, exploration of the various sources of data and most frequently used methodology. The last part of the course is concentrated on techniques for communicating the results of research. Special approval needed from the instructor.

ECON511 - Adv Math Economics 511-3 Advanced Mathematical Economics. A continuation of topics in 465 with more emphasis on proofs. Topics include economic applications of integration, differential equations and real analysis. Prerequisite: ECON 465 or consent of instructor.

ECON517 - Monetary Economics I 517-3 Monetary Economics I. A graduate-level introduction to the field of monetary economics. Students will focus on the core theoretical models to describe and explain the role of money in modern economies. The course emphasizes empirical methods in macroeconomics and reviews current empirical research and evidence on the channels through which money influences economic activity. Students will relate monetary variables to the rates of interest, inflation and unemployment, to deficits and the national debt, and to savings, investment, and output. Prerequisite: ECON 541A or B and 463 or equivalent.

ECON518 - Monetary Economics II 518-3 Monetary Economics II. An advanced graduate-level course in monetary economics. Students will use contemporary macroeconomic models to analyze monetary policy. The course emphasizes macroeconomic theory and the role of underlying frictions in monetary economies. Students will focus on recent developments and controversies in monetary theory and policy as well as on optimal monetary policy under discretion or commitment, monetary policy operating procedures, and the interaction of monetary and fiscal policy. Prerequisite: ECON 541B and 517.

ECON520A - Econ Devlpmt Theory & Policy 520A-Economic Development Theory and Policy. The two parts deal with the macroeconomic and microeconomic aspects of development economics, respectively.

520A topics include theories of development, structural change, income inequality, natural resources, open economy shocks, and the political economy of development.

ECON520B - Econ Devel Theory & Policy 520B-3 Economic Development Theory and Policy. The two parts deal with the macroeconomic and microeconomic aspects of development economics, respectively. 520B topics include theories and case studies of famine and famine prevention, gender and development, economics of child labor, and informal credit markets and microfinance. Prerequisite: ECON 465 and ECON 540A or their equivalent or consent of instructor.

ECON530 - Foreign Trade 530-3 Foreign Trade. This course covers the determinants of the pattern of trade and possible gains from trade, under both perfect and imperfect competition. It also examines trade policy issues such as optimal tariffs and the relative merits of alternative trade policies. A number of specific topics are also covered, for example: foreign direct investment, trade and the environment, and fair trade. Prerequisite: ECON 465 and ECON 540A or their equivalent or consent of instructor.

ECON531 - International Finance 531-3 International Finance. Application of theory to current international economic transactions. Emphasis is placed on topics at the frontier of research in international macroeconomics, with empirical studies. Prerequisite: ECON 465 and ECON 541A or consent of instructor.

ECON533 - Public Fin Theory & Practice 533-3 Public Finance Theory and Practice. Historical development of public finance theories with analysis of their policy implications. Prerequisite: ECON 330 or consent of instructor.

ECON534 - Economics of Taxation 534-3 Economics of Taxation. This course examines from a theoretical and applied point-of-view, various economic aspects of taxation. Other government revenue sources may also be analyzed such as inter-governmental grants and debt. Emphasis is on application of microeconomic theory to problems in taxation. Usual topics include: equity in taxation, shifting and incidence of taxes, excess burden of taxes, other economic effects of taxes, tax reform, debt. Prerequisite: ECON 330 and ECON 340, or ECON 440, or consent of instructor.

ECON540A - Microeconomic Theory I 540A-3 Microeconomic Theory I. The course provides the basic theoretical knowledge necessary for microeconomic research in business and government. Prerequisite: ECON 340 or ECON 440 or consent of instructor AND MATH 150 or its equivalent or consent from the Director of Graduate Studies in the Economics Department.

ECON540B - Microeconomic Theory II 540B-3 Microeconomic Theory II. A contemporary course in partial equilibrium analysis. Topics include the theory of the firm, market structure and the theory of the consumer. The course frequently takes an axiomatic approach; consequently there are many formal statements and proofs of theorems. Prerequisite: ECON 465 and ECON 540A or consent of instructor.

ECON540C - Microeconomic Theory III 540C-3 Microeconomic Theory III. A contemporary course in game theory as applied to economics. Topics include static games of complete and incomplete information with applications to Cournot oligopoly, tragedy of the commons, and auctions; as well as dynamic games of complete and incomplete information with applications to Stackelberg oligopoly, sequential bargaining, imperfect international competition, and job market signaling. Prerequisites: ECON 540A and ECON 540B or consent of instructor.

ECON541A - Macroeconomic Theory I 541A-3 Macroeconomic Theory I. The rigorous development of general equilibrium macroeconomic models to analyze the determination of national income in the context of Classical, Keynesian, Neoclassical and Monetarist economic systems. Also included is the study of key sectoral demand functions. Prerequisite: ECON 340 or ECON 440 or consent of instructor AND MATH 150 or its equivalent or consent from the Director of Graduate Studies in the Economics Department.

ECON541B - Macroeconomic Theory II 541B-3 Macroeconomic Theory II. Continuation of 541A. Analyzes the ideas of New Classical and New Keynesians on the determination of national income. Focuses on the impact of rational expectations and the natural rate hypotheses on the effectiveness of macroeconomic policy. Also included are recent developments in the area of business cycles. Prerequisite: ECON 541A.

ECON541C - Macroeconomic Theory III 541C-3 Macroeconomic Theory III. Recent developments and major issues in contemporary macroeconomic theory. Focuses on incorporating uncertainty, stochastic tools and dynamic analysis into macroeconomic theory. Prerequisite: ECON 541B.

ECON542A - Industrial Organization I 542A-3 Industrial Organization I. A study of the variety of forms of competition among firms. Topics include theories of the firm, oligopoly theory, theories of entry, product differentiation and innovation. Prerequisite: ECON 440 and ECON 441.

ECON542B - Industrial Organization II 542B-3 Industrial Organization II. A survey of government policy toward industry. Topics include antitrust: mergers, concentration and unfair trade practices, regulation of public utilities, peak load pricing, product, safety and environmental regulation. Prerequisite: ECON 440 and ECON 441.

ECON545 - Resource Economics 545-3 Resource Economics. A survey of theoretical and institutional aspects of energy production, distribution, consumption and regulation. Topics covered include cartel theory, history of energy use, theory of resource exhaustion, models of energy demand and supply, past and current policy issues, and environmental protection. Prerequisite: ECON 440 or consent of instructor.

ECON546 - Workshop: Resource Econ 546-3 Workshop in Resource Economics. A research seminar on topics related to energy production, distribution, consumption and regulation. Meetings will be divided among presentations of research of (a) faculty, (b) students, and (c) outside speakers, offered every semester. Maximum of three hours toward Master's degree in economics. Prerequisite: ECON 545.

ECON552 - Seminar: Economic Thought 552-3 Seminar in Economic Thought. An exploration of the basic philosophic assumptions which underlie the various types of economic thought with special emphasis upon the historical development of the premises of modern day economic theories.

ECON566 - Mathematical Econ II 566-3 Mathematical Economics II. Linear economic models. Linear programming. Input-output analysis and general equilibrium models. Prerequisite: ECON 340 or ECON 440 or ECON 465 or consent of instructor.

ECON567A - Econometrics I 567A-3 Econometrics I. This is a course in modern mathematical statistics applied to economics and allied fields. Students will use calculus and linear algebra to apply probability and statistical models to data, via parameter estimation and hypothesis testing. Key topics include probability models, features of probability distributions, sampling distributions, estimation via maximum likelihood, inference via likelihood ratio, score and Wald tests; and asymptotic theory. Applications center on the simple linear regression model and its variants, and students will apply models to data using econometric software. Prerequisite: ECON 465 or consent of instructor.

ECON567B - Econometrics II 567B-3 Econometrics II. Further topics in the theory and application of single equation econometric models including model specification, data problems, large sample results, non-spherical disturbances, heteroscedasticity and autocorrelation. Topics in time series analysis include unit root tests and ARIMA model building. Prerequisite: ECON 465 and ECON 567A or consent of instructor.

ECON567C - Econometrics III 567C-3 Econometrics III. Topics covered are systems of regression equations; models for panel data; simultaneous equations models; time series models; VAR; causality, cointegration, error correction model among others; and estimation and inference in models with discrete and limited dependent variables, i.e., Probit and Logit models, censored regression models and Tobit analysis. Prerequisite: ECON 567B or consent of instructor.

ECON570 - Seminar: Contmpory Microecon 570-3 Seminar in Contemporary Microeconomic Theory. An investigation of recent developments and current controversies in economic theory with emphasis on microeconomic problems. Prerequisite: ECON 540B.

ECON571 - Seminar: Contempory Macroecon 571-3 Seminar in Contemporary Macroeconomic Theory. An investigation of recent developments and current controversies in economic theory with emphasis on macroeconomic problems. Prerequisite: ECON 541B or consent of instructor.

ECON575A - Econometric Theory I 575A-3 Econometric Theory I. Topics include: probability theory; asymptotic theory; linear regression; likelihood ratio, Lagrange multiplier, and Wald tests; stochastic processes; ARIMA models; unit root tests, cointegration, spurious regression, and spurious trend; ARCH

models; VAR models; and other topics to be determined by the instructor. Prerequisite: ECON 567B or consent of instructor.

ECON575B - Econometric Theory II 575B-3 Econometric Theory II. Topics include: density estimation methods, nonparametric regression, stochastic frontiers, nonlinear regression models, nonlinear time series models, information matrix tests, generalized method of moments, non-nested hypothesis testing, Bayesian methods, bootstrapping, and other topics to be determined by the instructor. Prerequisite: ECON 575A or consent of instructor.

ECON580A - Performance Measurement 580A-3 Performance Measurement. Analysis of measurement of efficiency and productivity using frontier techniques. Focuses on theoretical and empirical specification of production frontiers and the evaluation of performance relative to those frontiers. Duality theory is exploited to investigate performance in various economic environments. Prerequisite: ECON 540A and ECON 465, or consent of instructor.

ECON580B - Welfare Measurement 580B-3 Welfare Measurement. A study of the theory and methods of constructing economic measures of price, quantity and other welfare indicators. Prerequisite: ECON 540A, ECON 540B and ECON 465 or consent of instructor.

ECON590 - Seminar: Contemporary Econ 590-1 to 8 (1 per semester) Seminar in Contemporary Economics. Presentation and discussion of current research in economics. One hour credit per semester. Graded S/U only.

ECON598 - Research Paper 598-1 to 3 Research Paper. Preparation of a research paper for a Master's degree. Special approval needed from the instructor.

ECON599 - Thesis 599-1 to 6 Thesis. Minimum of four hours to be counted toward a Master's degree. Graded S/U only.

ECON600 - Doctoral Dissertation 600-1 to 36 (1 to 16 per semester) Doctoral Dissertation. Hours and credit to be arranged by director of graduate studies. Graded S/U only.

ECON601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

ECON699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted

Economics Faculty

Becsi, Zsolt, Associate Professor, Ph.D., University of Wisconsin-Madison, 1991.
Dai, Chifeng, Associate Professor, Ph.D., University of Florida, 2003.
Fare, Rolf, Professor, Emeritus, Docent., University of Lund, 1976.
Gilbert, Scott, Associate Professor, Ph.D., University of California at San Diego, 1996.
Grabowski, Richard, Professor, Emeritus, Ph.D., University of Utah, 1977.
Lahiri, Sajal, Professor and Vandever Chair, Ph.D., Indian Statistical Institute, 1976.
Laumas, G. S., Professor, Emeritus, Ph.D., Wayne State University, 1966.
Layer, Robert G., Professor, Emeritus, Ph.D., Harvard University, 1952.
Mitchell, Thomas, Associate Professor, Emeritus, Ph.D., Brown University, 1984.
Morshed, Akm, Associate Professor, Ph.D., University of Washington, 2001.
Myers, John G., Professor, Emeritus, Ph.D., Columbia University, 1961.
Primont, Daniel A., Professor, Emeritus, Ph.D., University of California at Santa Barbara, 1970.
Sharma, Subhash C., Professor and Chair, Ph.D., University of Kentucky, 1983.
Sorensen, Andrea, Assistant Professor, Ph.D., Indiana University, 2014
Sylwester, Kevin, Professor, Ph.D., University of Wisconsin-Madison, 1997.
Trescott, Paul B., Professor, Emeritus, Ph.D., Princeton University, 1954.

Electrical Engineering Technology

Electrical Engineering Technology is part of the technological field that requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities; it lies in the occupational spectrum between the technician and the engineer at the end of the spectrum closest to the engineer.

A Capstone Option may be available in the electrical engineering technology major and is explained on the Capstone Option page. Students holding associate degrees of at least 60 semester hours in non-baccalaureate-oriented programs or equivalent certification with a minimum grade point average of 2.0 are qualified. For the electrical engineering technology major, the associate degree or equivalent certification should be in an electrical or electronics-related field. This option permits qualified students to fulfill their degree requirements by completing 60 semester hours of work approved by the Capstone advisor. Each individual's program of study may differ according to the previous academic work.

The undergraduate program in electrical engineering technology is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org. For each curriculum, a minimum of 30 hours in engineering technology courses must be taken in residence at Southern Illinois University Carbondale.

Bachelor of Science Degree in Electrical Engineering Technology, College of Engineering

Electrical Engineering Technology Major

The electrical engineering technology major is designed to prepare technologists who are capable of technical design and who can contribute to the development, production, testing, and installation of electrical and electronic devices, circuits, and systems. In addition, graduates are capable of participation in the planning and installation of power distribution systems and operating and maintaining complex electrical systems. Graduates of the program are employed in communications, power, electronics, sales, manufacturing, and other fields.

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Foundation Skills	13
ENGL 101, ENGL 102	6
Mathematics (substitute Mathematics in major)	3
CMST 101	3
UNIV 101	1
Disciplinary Studies	23
Fine Arts	3

Degree Requirements	Credit Hours
Human Health (BIOL 202)	2
Humanities	6
Science (substitute PHYS in major)	6
Social Science	6
Integrative Studies	3
Multicultural	3
Requirements for Major in Electrical Engineering Technology	(9)+81
PHYS 203A, PHYS 203B, PHYS 253A, PHYS 253B	(6)+2
MATH 111, MATH 150, MATH 282	(3)+8
MGMT 202	3
ENGR 222, CS 202, ECE 222	2
EET 150, EET 238, EET 245, or ECE 235, EET 304A, EET 304B, EET 332A, EET 332B, EET 403A, EET 403B, EET 437A, EET 437B, EET 438A, EET 438B, EET 439, EET 495A, EET 495B	56
Technical electives	10
Total	120

1 Courses in parenthesis will also apply towards 6 hours in the University Core Curriculum, making a total of 39.

Electrical Engineering Technology Courses

EET103 - Engineering Drawing I 103-3 Engineering Drawing I. (Same as IMAE 105) Links the components of technical sketching with current CAD software. Sketching to include: orthographic projection, sectional views and dimensioning. Employ these elements with current CAD software in creating drawing entities, managing layers, displaying and modifying drawings, annotating and dimensioning, and file management. Restricted to College of Engineering students or departmental approval required.

EET104 - Engineering Drawing II 104-3 Engineering Drawing II. Principles and practices of engineering drawing. Representation of mechanical components, dimensioning, tolerancing, and mechanical drawing symbols. Introduction to computer-aided drawing systems with applications to both micro-computer and mini-computer systems. Prerequisite: EET 103. Restricted to College of Engineering students or departmental approval required.

EET150 - Intro to EET 150-2 Introduction to Electrical Engineering Technology. This laboratory course gives students instrumentation and construction skills. It covers CAD/CAM for electronics

and instrumentation used to measure circuit values and generate signals. Students learn to identify components, analyze error, use units common to electrical measurement, and learn to design and build circuits. Students demonstrate skills by assembling, testing, and trouble-shooting an electronic kit. Prerequisite: MATH 111 or concurrent enrollment. Restricted to College of Engineering students or departmental approval required.

EET209 - Mfg Process Laboratory 209-3 Manufacturing Process Laboratory. (Same as IMAE 209) Laboratory experiments to familiarize the student with the theory and operation of manufacturing processes. Lab. Prerequisite: IMAE 208 or consent of instructor. Restricted to College of Engineering students or departmental approval required.

EET238 - Digital System Fundamentals 238-4 Digital System Fundamentals. This course studies fundamental digital concepts used in electronic design and application. The course covers traditional design approaches for combinational and sequential circuits. The course introduces contemporary approaches such as hardware design languages. Topics include logic gates, flip-flops, memory circuits, Karnaugh map, and VHDL/Verilog. A laboratory emphasizes design and application. Prerequisite: EET 150 or concurrent enrollment, MATH 111 or concurrent enrollment. Restricted to College of Engineering students or departmental approval required.

EET245 - Intro Circuit Theory 245-4 Introductory Circuit Theory and Applications. This course covers the fundamental theories of electric circuits. It covers symbols and diagrams that represent electric circuits and includes mathematical definitions and application of circuit components. Students analyze circuits using Ohm's and Kirchoff's Laws. The course introduces mathematical descriptions for alternating currents with practical examples. A laboratory demonstrates theory. Prerequisite: MATH 111, EET 150 or equivalent. Restricted to College of Engineering students or departmental approval required.

EET304A - AC/DC Circuit Theory 304A-4 AC/DC Circuit Theory and Application. DC network mesh and nodal analysis. The course covers Thevenin's theorems, Norton's theorems, superposition, delta-wye resistor transformations, maximum power transfer, phasor transforms and impedance concepts for AC analysis. The course covers frequency response of RC, RL, and RLC, resonant circuits. The course presents Bode plots of simple RC and RL filter circuits. A laboratory teaches safety and instrument usage. Prerequisite: EET 245 or ECE 235 with a grade of C or better, or consent of instructor.

EET304B - AC Network Theory & Appl 304B-4 Network Theory and Application. Course covers phasor transform methods for AC networks, dependent sources, source conversions, mesh and nodal analysis, AC bridges, superposition, Thevenin's theorem, Norton's theorem and delta-wye conversion. The course analyzes RC transient response and pulse characteristics. It presents and solves ideal OP AMP circuits. Fourier series theory for non-sinusoidal signals. Laboratory teaches instrument usage. Prerequisite: EET 304A, MATH 150. Restricted to College of Engineering students or departmental approval required.

EET321 - Auto Instr & Data Acquisition 321-3 Automated Instrumentation and Data Acquisition. The course covers computerized control of instruments and data acquisition systems. Students learn equipment and sensors selection, test equipment control and data acquisition systems development. The course introduces LabVIEW programming language. Students develop automated testing programs to control processes, display and analyze data using programmable test equipment and software. (Lecture + Lab). Prerequisite: ENGR 222 or CS 202 or ECE 222 with a minimum grade of C; EET 245 or ECE 235 with a minimum grade of C. Restricted to College of Engineering students or departmental approval required.

EET332A - DC Motors, Gen & Energy Conv 332A-4 DC Motors, Generators and Energy Conversion Devices. Course covers theory, application, and operation of DC motors and generators. It emphasizes testing and measurement of machine characteristics, parameters and efficiency and develops circuit models describing machine operation. The course covers analysis of industrial motor protection and control schemes. It introduces the science, application, and economics of DC power using photocells. Laboratory. Prerequisite: EET 304A or concurrent enrollment. Restricted to College of Engineering students or departmental approval required.

EET332B - Electric Mach & Pwr Sys 332B-4 AC Electric Machines and Power Systems. The theory and operation of AC machines and industrial power systems with emphasis on testing and measurement of machine characteristics, parameters and efficiency. The course reviews basic AC circuit analysis and introduces three-phase circuit analysis. The course develops power transformer, AC motor, and AC

generator models. Laboratory experience using test instruments and software. Prerequisite: EET 304B or concurrent enrollment. Restricted to College of Engineering students or departmental approval required.

EET342 - Technology Design 342-2 Technology Design. A design project on any technical subject selected by the student with advice from the instructor. Individual or group effort required to develop functional design. Report writing and oral presentation required. Restricted to College of Engineering students or departmental approval required.

EET390 - Cost Estimating 390-3 Cost Estimating. (Same as IMAE 390) Study of the techniques of cost estimation for products, processes, equipment, projects, and systems. Prerequisite: Mathematics 111. Restricted to College of Engineering students or departmental approval required.

EET392A - EET Co-op 392A-1 Electrical Engineering Technology Co-op. Supervised work experience in Electrical Engineering Technology industry. Restricted to junior standing. Special approval needed from the instructor. Mandatory Pass/Fail. Restricted to College of Engineering students or departmental approval required.

EET392B - EET Co-op 392B-1 Electrical Engineering Technology Co-op. Supervised work experience in Electrical Engineering Technology industry. Restricted to junior standing. Special approval needed from the instructor. Mandatory Pass/Fail. Restricted to College of Engineering students or departmental approval required.

EET403A - Electronic Circuit Analysis 403A-4 Electronic Circuit Analysis. This course studies fundamental solid-state electronic concepts, the application and design of transistor amplifiers, and operational amplifier circuits. Course topics include the ideal operational amplifier, diodes, rectifiers, analysis and design of bipolar transistor (BJT) amplifiers, and the analysis and design of field effect transistor (FET) amplifiers. A laboratory emphasizes electronics circuit design and analysis. Prerequisite: EET 304B. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

EET403B - Electronic App & Design 403B-4 Electronics Application and Design. This course focuses on system-level design and application of electronics circuits. Circuits include linear integrated circuits, quasi-linear circuits, integrated digital circuits, and pulse waveform generating and timing circuits. Topics include power amplifiers, Schmitt triggers, comparators, timers, and active filters. A design laboratory allows students to implement several design projects with increasing complexity. Prerequisite: EET 403A. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

EET437A - Telecomm Systems Fundamentals 437A-4 Telecommunication Systems Fundamentals. This course is a study of the fundamental concepts of analog and digital communication systems in addition to a survey of the state of the art of current and emerging communication technologies. Topics include modulation, signal encoding, transmission media, multiplexing, cellular, bluetooth, Wi-Fi, WiMAX and LTE-Advanced. Associated labs reinforce the concepts introduced and allow students to simulate and build real systems. (Lecture + Lab). Prerequisite: EET 304B with a minimum grade of C. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

EET437B - Data & Computer Communication 437B-4 Data and Computer Communication. This course is a study of data and computer networks. Students are introduced to communication protocols, networking technologies and the various computer networks topologies. The OSI (Open Systems Interconnection) model is used as a guide in introducing the purpose and underlying principles of the existing communication protocol standards. The course concludes with an overview of emerging communication standards and technologies. Topics include LAN, WAN, TCP/IP, Routing, and Data Link layer. Associated labs reinforce the concepts introduced and allow students to simulate and build real systems. Lecture + Lab. Prerequisite: EET 437A with a minimum grade of C. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

EET438A - Automatic Cntrl Systems Tech 438A-4 Automatic Control Systems Technology. The mathematical concepts and tools used to model and design automatic control systems. The mathematical models for electric, hydraulic, mechanical and thermal processes found in industry. The course uses Laplace transforms, transfer functions, block diagrams and signal flow graphs to represent systems,

determine system response and design control systems. A laboratory demonstrates applications. Prerequisite: EET 304B with a C or better, or consent of instructor; and EET 332A.

EET438B - Seq Digital Control & DAQ 438B-4 Sequential Digital Control and Data Acquisition. Concepts and components used in data acquisition and sequential control systems. The course covers sensors, signal conditioning, analog-to-digital/digital-to-analog conversion devices, relay logic design and programmable logic controllers. A laboratory demonstrates lecture topics and gives students experience with data acquisition and control languages and ladder logic programming within a design team. Prerequisites: CS 202 or ENGR 222 or ECE 222 with a C or better; EET 438A with a C or better, or consent of instructor.

EET439 - MCU Application & Design 439-4 Microcontroller Application and Design. This course introduces embedded systems design and microcontroller programming. Students study microcontroller architectures and design applications. The course emphasizes interfacing microcontrollers with sensors and actuators. Software tools like Matlab and Simulink aid in visualization and Model-Based Design. Prerequisites: EET 238 with a C or better; CS 202 or ENGR 222 or ECE 222 with a C or better; or consent of instructor.

EET445 - Computer-Aided Manufacturing 445-3 Computer-Aided Manufacturing. (Same as IMAE 445) Introduction to the use of computers in the manufacturing of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control and quality control. Laboratory. Prerequisite: IMAE 105 or IMAE 110, IMAE 208, MATH 111 or equivalent. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

EET455 - Industrial Robotics 455-3 Industrial Robotics. (Same as IMAE 455) Study of robotics within a wide variety of application areas. Topics covered include classification of robots, sensor technology, machine vision; control systems, including programmable logic controllers (PLCs); robot safety and maintenance; and economic justification of robotic systems. Prerequisite: Mathematics 111 or equivalent. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

EET492 - Spec Probs-Industry & Tech 492-1 to 6 Special Problems in Industry and Technology. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected technical problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

EET495A - Elec Eng Tech Senior Design I 495A-1 Electrical Engineering Technology Senior Design I. Capstone Design Part 1. Includes proposal and preliminary design as part of a team project. Project development skills, scope of work, time and cost estimating, quality, ethical issues, professionalism, documentation of team member efforts, preliminary designs, identification and assignment of tasks to project team members, development of final proposal, design work and review, oral presentation of final proposal. Not for graduate credit. Restricted to senior standing in Electrical Engineering Technology (second to last semester).

EET495B - Elec Eng Tech Senior Design II 495B-1 Electrical Engineering Technology Senior Design II. Capstone Design part 2. Demonstrated project management principles. Design options & cost-benefit analysis. Development of the final decision matrix. Team coordination and documentation of team member efforts, design stages, team communication and team decision making processes. Implementation of the design (if the project warrants). Evaluation of final product. Written, oral and poster presentation of final design. Not for graduate credit. Prerequisite: EET 495A with a grade of C or better. Restricted to senior standing in Electrical Engineering Technology (last semester).

Electrical Engineering Technology Faculty

Chang, Feng-Chang (Roger), Associate Professor, Ph.D., Ohio State University, 1985.

Chen, Han Lin, Associate Professor, Emeritus, M.S., Southern Illinois University, 1958.

Cantor, Keith L., Associate Professor, Emeritus, M.S., State College of Washington at Pullman, 1960.

Crosby, Garth V., Associate Professor, Ph.D., Florida International University, 2007.

Cross, Bud D., Visiting Assistant Professor, Emeritus, M.S., Southern Illinois University, 1965.
DeRuntz, Bruce D., Professor, Ph.D., Southern Illinois University Carbondale, 2005.
Dunning, E. Leon, Professor, Emeritus, Ph.D., University of Houston, 1967.
Dunston, Julie K., Associate Professor and Interim Chair, Ph.D., Florida State University, 1995.
King, Frank H., Visiting Assistant Professor, Emeritus, Ph.D., Southern Illinois University, 1981.
Marusarz, Ronald K., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1999.
Meyers, Fred E., Associate Professor, Emeritus, M.B.A., Capitol University, 1975.
Rogers, C. Lee, Associate Professor, Emeritus, Ph.D., Southern Illinois University, 1975.
Spezia, Carl J., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2002; 2005.
Velasco, Tomas, Associate Professor, Ph.D., University of Arkansas, 1991.

English

The major in English is 36 semester hours at least half of which must be taken at Southern Illinois University Carbondale. The English major may choose from four specializations listed below.

Students who wish to declare English as a major should consult the Director of Undergraduate Studies in English early in their college careers. Continuing students who wish to declare an English major should petition the Department of English for admission to the department. Transfer students should bring their transcripts and syllabi of courses in English for evaluation of transfer credit. Thereafter, all English majors must have their advance registration forms signed by an advisor in the Department of English.

Only English courses completed with at least a C will fulfill a major requirement. Deviations from regular programs must have prior written department approval.

Students who wish to construct an interdepartmental major in English and certain related fields may do so in consultation and with the approval of the Director of Undergraduate Studies in English.

Students are urged to supplement their English majors through the study of classical and modern languages, as well as the study of foreign literature in translation. Majors preparing for graduate school should take two years of a foreign language.

Although a minor field is not required, English majors are encouraged to consider complementary minor fields such as communication studies, foreign languages and literatures, history, philosophy, linguistics, journalism, psychology, sociology, political science, Africana studies, theater, computer science, business administration, and marketing. In fact creativity, critical thinking, and communication – skills acquired in the English major – are crucial for success in any field of study. The English major and minor complement and enhance study in virtually all-academic disciplines.

ENGLISH CORE COURSES

All students majoring in English will take the following English core courses: ENGL 301, ENGL 302A, ENGL 302B, ENGL 303, ENGL 365 and ENGL 393 or ENGL 471 or ENGL 472.

Bachelor of Arts Degree in English, College of Liberal Arts

English Program Specializations

A student may wish to pursue one of several specializations in the College of Liberal Arts. The degree earned and the requirements for the degree are as follows:

Degree Requirements	Credit Hours
University Core Curriculum Requirements - Recommended but not required, CLAS 230, with a grade of C or better.	41

Degree Requirements	Credit Hours
College of Liberal Arts Academic Requirements Requirements for Major in English	36
In addition, one year college credit in a single foreign language with at least a C (also fulfills College of Liberal Arts foreign language requirement)	6
Electives	37
Total	120

Students should regularly consult with their departmental advisor to achieve a suitable range and breadth of course work. Students planning to enter graduate school are strongly urged to take two years of a foreign language.

ENGLISH MAJOR — LITERATURE SPECIALIZATION

In addition to the English core courses, students will take six electives from the 300- and 400-level courses in English. At least three of these elective courses must include the following: one course in English, American, or Irish Literature before 1800; one course in English, American, or Irish Literature after 1800; and one course in continental literature or substitute.

ENGLISH MAJOR — CREATIVE WRITING SPECIALIZATION

In addition to the English core courses, students will take ENGL 381A and ENGL 382A; ENGL 381B and ENGL 382B; ENGL 351 or ENGL 352; and either ENGL 492A or ENGL 492B

ENGLISH MAJOR — PREPROFESSIONAL SPECIALIZATION

In addition to the English core courses, students interested in such fields as law, business, technical communication, information technology, and government will take the following courses: ENGL 290 or ENGL 291 or ENGL 390 or ENGL 391 or ENGL 392; ENGL 300- or ENGL 401 or ENGL 403; ENGL 490 or ENGL 491; three electives from the 300- and 400-level courses in English, or with the consent of the departmental advisor, a course in another department.

Bachelor of Science Degree, College of Education and Human Services or Bachelor of Arts Degree, College of Liberal Arts

English Major - Teacher Education Preparation

The major in English is 36 semester hours at least half of which must be taken at Southern Illinois University Carbondale. The English major may choose from four specializations listed below.

Students who wish to declare English as a major should consult the Director of Undergraduate Studies in English early in their college careers. Continuing students who wish to declare an English major should petition the Department of English for admission to the department. Transfer students should bring their transcripts and syllabi of courses in English for evaluation of transfer credit. Thereafter, all English majors must have their advance registration forms signed by an advisor in the Department of English.

Only English courses completed with at least a C will fulfill a major requirement. Deviations from regular programs must have prior written department approval.

Students who wish to construct an interdepartmental major in English and certain related fields may do so in consultation and with the approval of the Director of Undergraduate Studies in English.

Students are urged to supplement their English majors through the study of classical and modern languages, as well as the study of foreign literature in translation. Majors preparing for graduate school should take two years of a foreign language.

Although a minor field is not required, English majors are encouraged to consider complementary minor fields such as communication studies, foreign languages and literatures, history, philosophy, linguistics, journalism, psychology, sociology, political science, Africana studies, theater, computer science, business administration, and marketing. In fact creativity, critical thinking, and communication – skills acquired in the English major – are crucial for success in any field of study. The English major and minor complement and enhance study in virtually all-academic disciplines.

No Extended Campus (on-line) course will count toward the major without prior consent from the Undergraduate Studies Director. In making such determinations, the Director will take into account the nature of the students' other educational experiences. Except in rare circumstances, students on campus during a given semester will not be allowed to take an Extended Campus (on-line) course in lieu of a course that is simultaneously being offered in traditional format. Except in rare circumstances, students will not be allowed to take more than two Extended Campus (on-line) courses toward completion of the English major.

ENGLISH CORE COURSES

All students majoring in English will take the following English core courses: ENGL 301, ENGL 302A, ENGL 302B, ENGL 303, ENGL 365 and ENGL 393 or ENGL 471 or ENGL 472.

ENGLISH MAJOR – TEACHER EDUCATION PREPARATION

In addition to the English core courses, majors interested in becoming teachers of English will take the following courses: ENGL 300 or ENGL 401, ENGL 485A and ENGL 485B. At least one course in English, American, or Irish Literature before 1800; one course in English, American, or Irish Literature after 1800; and one course in continental literature or substitute. NOTE: For the teacher licensure requirements, please see the course work offered by the College of Education and Human Services.

Bachelor of Science Degree, College of Education and Human Services or Bachelor of Arts Degree, College of Liberal Arts

Students who wish to become certified teachers of English may pursue their majors for the BS or BA degree as follows:

Degree Requirements	Credit Hours
University Core Curriculum Requirements - (PSYC 102; EDUC 211, EDUC 214; CLAS 230 recommended but not required)	41
Requirements for Major in English Content Courses: ENGL 301, ENGL 300 or ENGL 401, ENGL 302A,B, ENGL 303, ENGL 365, ENGL 393, Before 1800, After 1800, Continental Literature	30
Methods Courses: ENGL 485A, ENGL 485B	6
Professional Education Requirements: EDUC 313, EDUC 308, EDUC 319, EDUC 301, EDUC 302, EDUC 303, EDUC 401A	24
Teacher training candidates must take the Teacher Education Preparation specialization in the English major described above. In addition, one year college credit in a single foreign language.	6

Degree Requirements	Credit Hours
Electives	6
Total	120

English Minor

The minor in English is a minimum of 18 semester hours at least half of which must be taken at Southern Illinois University Carbondale. Only English courses which are completed with at least a C fulfill a minor requirement.

Minors are available with four specializations. Students interested in English as a minor are asked to confer with the Director of Undergraduate Studies in English or an advisor in the Department of English to determine their specific course of study.

ENGLISH MINOR — PREPROFESSIONAL SPECIALIZATION (18 HOURS)

ENGL 290 or ENGL 291; ENGL 300; ENGL 301; ENGL 365 or ENGL 471 or ENGL 472; ENGL 390, ENGL 391, or ENGL 392; and ENGL 490 or ENGL 491.

ENGLISH MINOR — CREATIVE WRITING SPECIALIZATION (18 HOURS)

Creative writing minors should take at least one course from ENGL 381A, ENGL 382A or ENGL 384; ENGL 381B or ENGL 382B; ENGL 351 or ENGL 352; either ENGL 492A, ENGL 492B, or ENGL 492C; and two 300- or 400- level English courses.

ENGLISH MINOR — LITERATURE SPECIALIZATION (18 HOURS)

ENGL 301; and five 300- or 400-level courses.

ENGLISH MINOR — TEACHING SPECIALIZATION (24 HOURS)

For students who wish to meet the Elementary Education Major requirements in English, 12 hours of the following English courses must be upper division: ENGL 209, ENGL 290, ENGL 302A, ENGL 302B, ENGL 303, ENGL 325, ENGL 332, ENGL 333, ENGL 335, ENGL 365, ENGL 393, ENGL 401 or ENGL 481.

English Courses

ENGL100 - Basic Writing 100-3 Basic Writing. This course prepares students for the writing demands of English 101 and of the University. It teaches students processes for developing ideas, developing and organizing sentences and paragraphs, drafting, revising and editing. Placement in this course is determined by a combination of ACT score and a writing placement exam, or by a diagnostic essay exam given the first week of class in English 101.

ENGL101 - English Composition I 101-3 English Composition I. (University Core Curriculum) [IAI Course: C1 900] Rhetorical foundations for demands of academic and professional writing, including recognition and deployment of strategies and processes for effective written products in various contexts and for various purposes. Class discussion and readings focus on the function and scope of professional literacy. To receive credit in the University Core Curriculum, a student must earn a C or better.

ENGL102 - English Composition II 102-3 English Composition II. (University Core Curriculum) [IAI Course: C1 901R] The second course in the two-course sequence of composition courses required of all students in the University. Using culturally diverse reading materials, the course focuses on the kinds

of writing students will do in the University and in the world outside the University. The emphasis is on helping students understand the purpose of research, develop methods of research (using both primary and secondary sources), and report their findings in the appropriate form. Prerequisite: English 101 or equivalent with a minimum grade of C. To receive credit in the University Core Curriculum, a student must earn a C or better in English 102.

ENGL119 - Intro to Creative Writing 119-3 Introduction to Creative Writing. (University Core Curriculum) This course offers an introduction to the art and craft of writing poetry and short fiction. Requirements will include writing exercises, reading and analyzing published poetry and fiction, conferences, and the creation of a portfolio of original poetry and fiction. There may be examinations, journal writing, and/or compilation of an anthology of published or original works.

ENGL119H - Intro Creative Writing H 119H-3 Introduction to Creative Writing. (University Honors Program) (University Core Curriculum) This course offers an introduction to the art and craft of writing poetry and short fiction. Requirements will include writing exercises, reading and analyzing published poetry and fiction, conferences, and the creation of a portfolio of original poetry and fiction. There may be examinations, journal writing, and/or compilation of an anthology of published or original works.

ENGL120H - Honors Composition 120H-3 Honors Advanced Freshman Composition. (University Honors Program) (University Core Curriculum course) [IAI Course: C1 901R] Fulfills Foundation Skills requirement for composition. Writing critical essays on important books in the following categories: autobiography; politics; fiction; eyewitness reporting; and an intellectual discipline. To receive credit in the University Core Curriculum, a student must earn a C or better. Prerequisite: ACT score of 29 or higher or CLEP test qualifying score of 57-60 or admission to the University Honors Program.

ENGL121 - Western Literary Tradition 121-3 The Western Literary Tradition. (University Core Curriculum) [IAI Course: H3 900] The course offers a critical introduction to some of the most influential and representative work in the Western literary tradition. Emphasis is on the interconnections between literature and the philosophical and social thought that has helped to shape Western culture.

ENGL121H - Western Lit Honors 121H-3 The Western Literary Tradition Honors. (University Honors Program) (University Core Curriculum) [IAI Course: H3 900] The course offers a critical introduction to some of the most influential and representative work in the Western literary tradition. Emphasis is on the interconnections between literature and the philosophical and social thought that has helped to shape Western culture.

ENGL204 - Lit Perspectives-Modern World 204-3 Literary Perspectives of the Modern World. (University Core Curriculum) [IAI Course: H3 900] This course introduces the literature of the twentieth century using representative works from the beginning through the close of the century. Course material may be drawn from fiction, verse, and drama, as well as including examples from supporting media (film, performance). Course may be taken as a sequence to English 121, "The Western Literary Tradition", but 121 is not a prerequisite for this course. Prerequisite: ENGL 102 or its equivalent.

ENGL205 - Cultural Diversity Am Lit 205-3 Cultural Diversity in American Literature. (University Core Curriculum) [IAI Course: H3 910D] This course explores the cultural diversity within American literature. By studying the historical, philosophical, political and narrative contexts attributed to each culture, we will understand a particular culture's interpretation of what it means to be an American, and, in turn, appreciate our racial and multicultural diversity. Topics include the initial encounters between Native Americans and European colonists; Slavery; immigration; African Americans, Eastern and Western European Americans, Hispanic Americans, Asian Americans and others who represent the American experience as reflected in literature, both in fiction and non-fiction.

ENGL206A - Lit Among the Arts: The Visual 206A-3 Literature Among the Arts: The Visual. (University Core Curriculum) A theoretical and historical examination of American graphic novellas, comic books and "comix" from their origins in the 1930s to the present, emphasizing the opportunities that a new and developing medium makes available for redefining narration, for social critique, and for examining the historical.

ENGL209 - Introduction to Genre 209-3 Introduction to Genre. (University Core Curriculum Course) [IAI Course: H3 900] This course introduces students to critical readings of multiple literary genres and

requires students to apply a variety of analyses, including approaches adapted from other disciplines, to texts in these genres. Prerequisites: ENGL 101 and 102; or 120H with grades of C or better.

ENGL212 - American Studies 212-3 Introduction to American Studies. (Same as HIST 212) (University Core Curriculum) Offers interdisciplinary approach to the study of America and American selfhood, and thus to the central question, "What is an American?". Texts range from novels and films to museums and shopping malls. Issues range from multiculturalism to abstract notions such as citizenship and authenticity. Fulfills central requirement for American Studies Minor.

ENGL225 - Women in Literature 225-3 Women in Literature. (Advanced University Core Curriculum course) (Same as WGSS 225) [IAI Course: H3 911D] Examines the ways in which women are portrayed in literature, especially in twentieth-century novels, drama, short fiction, and poetry written by women. Prerequisite: ENGL 102 or 120. Satisfies the University Core Curriculum Multicultural requirement in lieu of English 205.

ENGL290 - Intermed Analytical Writing 290-3 Intermediate Analytical Writing. Offers students practice and reflection in analytical, argumentative and expository writing. Emphasis is placed on understanding the writing and analytical processes necessary for effective integration of findings and arguments into reasoned written statements. Prerequisite: ENGL 101 and 102; or 120; or equivalent.

ENGL291 - Intermediate Technical Writing 291-3 Intermediate Technical Writing. An intermediate course in technical and professional writing for sophomores, juniors, and seniors. Intended for students preparing for careers in applied technology, science, agriculture, business, and other fields where practical writing is a part of the daily routine. Prerequisite: ENGL 101 and 102; or 120; or equivalent.

ENGL293 - Special Topics in Lit/Lang 293-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance. Both students and faculty suggest ideas. May be repeated as the topic varies. Special approval needed from the department.

ENGL300 - Intro: Language Analysis 300-3 Introduction to Language Analysis. Nature of language and linguistic inquiry. Dialectology, usage, and chief grammatical descriptions of present day American English. Required of teacher training candidates. Prerequisite: ENGL 102 or 120 or equivalent.

ENGL301 - Intro to Literary Analysis 301-3 Introduction to Literary Analysis. Intensive reading and writing, designed to acquaint students with basic terms, concepts and discourse of literary analysis. Satisfies CoLA Writing-Across-the-Curriculum requirement for English majors. Restricted to English majors, English minors and Elementary Education majors. Prerequisite: ENGL 102 or ENGL 120 or equivalent.

ENGL302A - Early Brit Literary History 302A-3 Literary History of Britain to 1785. A survey of British literature to 1785 (Beowulf to the Romantics). Prerequisite: ENGL 102 or 120H or equivalent with a grade of C or better.

ENGL302B - Later Britain Literary History 302B-3 Literary History of Britain, 1785-Present. A survey of British literature from 1785 to the present day. Prerequisite: ENGL 102 or 120H or equivalent with a grade of C or better.

ENGL303 - US Literary History 303-3 Literary History of the United States. A survey of American literature to the present day. Prerequisite: ENGL 102 or 120H or equivalent with a grade of C or better.

ENGL307I - Film as Literary Art 307I-3 Film as Literary Art. (University Core Curriculum) [IAI Course: F2 908] This course proposes to examine the influential role literature has on the cinematic tradition both in the past and present. It intends to emphasize the artistic and visual debt cinema owes to literature by concentrating on major achievements and analyzing them accordingly.

ENGL313A - Beginning Irish Language 313A-3 Beginning Irish Language. This course will provide students with an introduction to the Irish language. Students will be able to communicate, at a basic level, through the medium of Irish on a range of topics. Emphasis will be placed on the spoken language. The course will also include some aspects relating to Irish culture. No prerequisites.

ENGL313B - Continuing Irish Language 313B-3 Continuing Irish Language. This course will provide students with continuing work in the Irish language. Students will be able to communicate, at a basic

level, through the medium of Irish on a range of topics. Emphasis will be placed on the spoken language and some written work will be required. The course will also include some aspects relating to Irish culture. Prerequisite: ENGL 313A, or permission of the instructor.

ENGL325 - Black American Writers 325-3 Black American Writers. (Advanced University Core Curriculum course) (Same as AFR 325) [IAI Course: H3 910D] Poetry, drama, and fiction by Black American writers. Satisfies the University Core Curriculum Multicultural requirements in lieu of English 205. Prerequisite: ENGL 102 or ENGL 120 or equivalent.

ENGL332 - Folktales & Mythology 332-3 Folktales and Mythology. A survey of non-classical mythology and folktales, emphasizing its medieval and modern aspects as well as the use of folklore in major literary works. Readings will cover Norse, Celtic, and Middle Eastern mythology, their use by English and American writers, such as Tennyson, Irving, and Hawthorne and the popular folk-ballad. Students are encouraged to explore other aspects of world folklore in their independent research papers. Prerequisite: ENGL 102 or 120 or equivalent.

ENGL333 - The Bible as Literature 333-3 The Bible as Literature. To introduce students to types of literature in the Bible while familiarizing them with Biblical texts. Prerequisite: ENGL 102 or 120 or equivalent.

ENGL335 - The Short Story 335-3 The Short Story. Reading and discussion of short stories by American and European authors. Prerequisite: ENGL 101 and 102; or 120; or equivalent.

ENGL351 - Forms of Fiction 351-3 Forms of Fiction. A study of fictional forms and form in fiction through selected readings and exercises. This course is taught by a publishing fiction writer and designed for student fiction writers. Prerequisite: ENGL 381A or consent of instructor.

ENGL352 - Forms of Poetry 352-3 Forms of Poetry. A study of poetic forms and form in poetry through selected readings and exercises. This course is taught by a publishing poet and designed for student poets. Prerequisite: ENGL 382A or consent of instructor.

ENGL355A - Survey Afr Amer Lit to 1940 355A-3 Survey of African-American Literature, Part I. (Same as AFR 355A) Course traces evolution African American Literature from roots in such Afri-based secular and sacred oral texts as folk tales, work songs, the Spirituals, Blues and other verbal forms, through the emergence of written texts, the eighteenth century up to the end of the Harlem Renaissance in 1940. Among these concerns are the continuing quest for freedom, identity, protest against oppression, and writers' interpretation of enduring African American spiritual and cultural values.

ENGL355B - Survey Afr Amer Lit Since 1940 355B-3 Survey of African-American Literature, Part II. (Same as AFR 355B) Examination of literary texts, voices and movements in the USA from 1940 to Present. Among these concerns are the continuing quest for freedom, identity, protest against oppression, and writers' interpretation of the enduring African American spiritual and cultural values. Focus on the major developments in African American literature after the Harlem Renaissance and its impact on the contemporary literature of African Americans.

ENGL365 - Shakespeare 365-3 Shakespeare. Reading and discussion of the major plays. Satisfies CoLA Writing-Across-the Curriculum requirement for English majors. Prerequisite: ENGL 101 and 102; or 120; or equivalent.

ENGL381A - Beginning Fiction 381A-3 Creative Writing: Beginning Fiction. Introduction to basic intentions and techniques of writing creative prose, through readings, exercises, story writing, and workshopping. Prerequisite: ENGL 102 or 120; or consent of instructor.

ENGL381B - Intermediate Fiction 381B-3 Creative Writing: Intermediate Fiction. Focus upon the writing of fiction, through readings, considerations of form and technique, writing of stories or other narratives, and workshopping. Prerequisite: ENGL 381A, or consent of instructor.

ENGL382A - Beginning Poetry 382A-3 Creative Writing: Beginning Poetry. Introduction to basic intentions and techniques of writing poetry, through readings, exercises, writing poems, and workshopping. Prerequisite: ENGL 102 or 120; or consent of instructor.

ENGL382B - Intermediate Poetry 382B-3 Creative Writing: Intermediate Poetry. Focus on the writing of poetry, through readings, considerations of form and technique, writing poems, and workshopping. Prerequisite: ENGL 382A or consent of instructor.

ENGL384 - Literary Nonfiction 384-3 Creative Writing: Introduction of Literary Nonfiction. Introduction to basic intentions and techniques of writing literary nonfiction, through readings, exercises, writing nonfiction, and workshopping. Prerequisite: ENGL 102 or 120; or consent of instructor.

ENGL390 - Advanced Composition 390-3 Advanced Composition. Expository writing. Prerequisite: C average in ENGL 120; or C average in ENGL 101 and 102; or equivalent. Open to English majors and minors or with consent of department.

ENGL391 - Precision: Reading/Writing 391-3 Precision in Reading and Writing. To improve the student's ability to read and write with precision and clarity, depending on reading complex material (requiring no particular background for comprehension) and on writing precis of it. Prerequisite: grade of B in ENGL 102; or C in ENGL 120; or C in ENGL 290.

ENGL392 - Tech and Technical Comm 392-3 Technology and Technical Communication. A course in technical and professional writing intended to provide practical experience with writing and advanced writing technologies. Intended for students preparing for careers where writing with technology is a part of the daily routine. Prerequisite: ENGL 290 or 291; or equivalent.

ENGL393 - Undergraduate Seminar 393-3 Undergraduate Seminar. Topical undergraduate seminar. Topics vary and will be announced in advance. Required for majors; non-majors may enroll with consent of instructor. Prerequisite: ENGL 102 or 120H or equivalent with a grade of C or better.

ENGL401 - Modern English Grammars 401-3 Modern English Grammars. Survey of the structure of English, with emphasis on phonetics and phonology, morphology, syntax, semantics, pragmatics, grammar instruction, stylistics and language variation. Specifically designed to meet the needs of prospective teachers of composition and language arts at the secondary and college levels.

ENGL402 - Old English Lang & Lit 402-3 Old English Language and Literature. Introduction to the language, literature and culture of Anglo-Saxon England, with emphasis on Old English heroic and elegiac poetry, exclusive of Beowulf.

ENGL403 - History of English Language 403-3 History of the English Language. (Same as CLAS 403) The development of the language from its Indo-European roots through Early Modern English and selected American dialects. Emphasis on the geographical, historical and cultural causes of linguistic change.

ENGL404A - Medieval Allegory and Romance 404A-3 Medieval Allegory, History and Romance. Three popular Medieval genres as represented by major texts of the early through the late Middle Ages, exclusive of Chaucer, including works such as Dream of the Rood, Sir Orfeo, Sir Gawain and the Green Knight, Piers Plowman, The Book of Margery Kempe and selections from Lawman's Brut and Malory's Le Morte Darthur.

ENGL404B - Medieval Lyric, Ballad, Drama 404B-3 Medieval Lyric, Ballad and Drama. Lyric, ballad and drama from the early through the late Middle Ages, including translations of the Old English Wife's Lament, Husband's Message, Wanderer, and Seafarer, as well as Middle English religious and love lyrics and the Robin Hood ballads, with special emphasis on the great plays of the fifteenth century and the rebirth of drama in the Western World.

ENGL405 - Middle English Lit: Chaucer 405-3 Middle English Literature: Chaucer. Major works including Troilus and Criseyde and selections from The Canterbury Tales.

ENGL412 - Non-drama Lit Renaissance 412-3 English Non-Dramatic Literature: The Renaissance. Topics vary, but usually lyric poets, especially 17th-century metaphysical poets such as Donne, Herbert and Marvell.

ENGL413 - Restoration & Early 18th Cent 413-3 English Non-Dramatic Literature: The Restoration and Earlier Eighteenth Century. Major works of Dryden, Pope, and Swift, and the non-dramatic specialties of Behn, Addison and Steele.

ENGL414 - Nondrama Lit Later 18th Cent 414-3 English Non-Dramatic Literature: The Later Eighteenth Century. Major poets from Thomson to Blake, and major prose writers, with emphasis on Johnson, Boswell and their circle.

ENGL421 - English Romantic Literature 421-3 English Romantic Literature. Wordsworth, Coleridge, Byron, Shelley, Keats, and other writers of the era.

ENGL422 - Victorian Poetry 422-3 Victorian Poetry. Tennyson, Browning, Arnold and other poets in England.

ENGL423 - Modern British Poetry 423-3 Modern British Poetry. Major modernists (Yeats, Eliot, Pound), with selected works of Auden, Owen, Thomas, Heaney and others.

ENGL424 - Native American Verbal Art 424-3 Native American Verbal Art. (Same as ANTH 424) This class examines the oral traditions (story-telling, poetry, song, chant, etc.) of Native American Peoples. This class focuses on the ways that Native American verbal art has presented/represented by outsiders as well as on formal features and forms of Native American verbal art. Attention is paid to the place and structure of verbal art in Native societies. This class focuses on the broad spectrum of verbal art in North America.

ENGL425 - Modern Continental Poetry 425-3 Modern Continental Poetry. Representative poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece.

ENGL426 - American Poetry to 1900 426-3 American Poetry to 1900. Trends and techniques in American poetry to 1900.

ENGL427 - American Poetry: 1900-Present 427-3 American Poetry from 1900 to the Present. The more important poets since 1900.

ENGL433 - Religion & Literature 433-3 Religion and Literature. Introduce students to the study of religious meaning as it is found in literature.

ENGL436 - Major American Writers 436-3 Major American Writers. Significant writers from the Puritans to the present. May be repeated only if topic varies and with consent of the department.

ENGL437 - American Literature to 1800 437-3 American Literature to 1800. Representative works and authors from the period of exploration and settlement to the Federal period.

ENGL445 - Backgrounds of Western Lit 445-3 Cultural Backgrounds of Western Literature. (Same as CLAS 445) A study of ancient Greek and Roman literature, Dante's Divine Comedy, and Goethe's Faust, as to literary type and historical influence on later Western writers.

ENGL446 - Caribbean Literature 446-3 Caribbean Literature. Representative texts from drama, poetry, and fiction that have shaped black diaspora aesthetics in the Caribbean, with special reference to black literature of the North American continent.

ENGL447 - African Literature 447-3 African Literature. Selected works of poetry, drama, and fiction by modern African authors.

ENGL448A - Irish Literature Survey 448A-3 Irish Literature Survey. (Same as CLAS 448A) An introductory survey in historical context of the literature of Ireland, including Gaelic literature in translation from the early Christian era (400 AD) to the late 18th century; the first two centuries of Irish literature in English (18th and 19th century); and the Celtic Twilight and the Irish Literary Renaissance.

ENGL448B - Irish Literature 448B-3 Irish Literature. Major works, authors, genres, periods, or movements within Irish Literature. Topics will vary (i.e., Irish Women Writers, Joyce and Yeats, The King

Tales, 19th Century Irish Writers, the Celtic Twilight, Contemporary Irish Poets, etc.), providing in-depth study in particular areas within the 16 centuries of Irish Literature.

ENGL451 - 18th Century English Fiction 451-3 Eighteenth Century English Fiction. The novel from Defoe to Jane Austen, including works by Fielding, Richardson and others.

ENGL452 - 19th Century English Fiction 452-3 Nineteenth Century English Fiction. The Victorian novel from 1830, including works by the Brontes, Dickens, George Eliot, Thackeray and others.

ENGL453 - Modern British Fiction 453-3 Modern British Fiction. Major writers (including Conrad, Joyce, Woolf and Lawrence), with selected fiction from mid-century and later.

ENGL455 - Modern Continental Fiction 455-3 Modern Continental Fiction. Selected major works of Europe and authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse.

ENGL458 - American Fiction to 1900 458-3 American Fiction to 1900. Trends and techniques in the American novel and short story.

ENGL459A - American Prose 1900-Mid-century 459A-3 American Prose from 1900 to Mid-Century: The Modern Age. Representative narratives from the turn of the century to the post-World War II period.

ENGL459B - American Prose Midcent-Present 459B-3 American Prose from Mid-Century to the Present: The Postmodern Age. Representative narratives from the post-World War II period to the present.

ENGL460 - Elizabethan/Jacobean Drama 460-3 Elizabethan and Jacobean Drama. Elizabethan drama excluding Shakespeare: such Elizabethan playwrights as Greene, Peele, Marlowe, Dekker; and Jacobean drama: such Jacobean and Caroline playwrights as Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley.

ENGL462 - English Restoration/18th C Drama 462-3 English Restoration and 18th Century Drama. After 1660, representative types of plays from Dryden to Sheridan.

ENGL464 - Modern British Drama 464-3 Modern British Drama. Major writers (including Shaw and Synge), with selected works of later dramatists such as Churchill and Bond.

ENGL465 - Modern Continental Drama 465-3 Modern Continental Drama. The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain and Portugal.

ENGL468 - American Drama 468-3 American Drama. The rise of drama, with emphasis on the 20th century.

ENGL469 - Contemporary Topics in Drama 469-3 Contemporary Topics in Drama. Varying topics on cross-national and cross-cultural 20th-century drama with focus on theoretical issues.

ENGL471 - Shakespeare I 471-3 Shakespeare: The Early Plays, Histories, and Comedies. Such plays as A Midsummer Night's Dream, The Merchant of Venice, The Taming of the Shrew, Henry IV Part I, Henry V and Much Ado about Nothing. Satisfies CoLA Writing-Across-the-Curriculum requirement for English majors.

ENGL472 - Shakespeare II 472-3 Shakespeare: The Major Tragedies, Dark Comedies, and Romances. Such plays as Hamlet, Macbeth, Othello, King Lear, Measure for Measure, The Winter's Tale and The Tempest.

ENGL473 - Milton 473-3 Milton. A reading of a selection of the minor poems, of Paradise Lost, Paradise Regained, Samson Agonistes, and the major treatises.

ENGL481 - Young Adult Literature 481-3 Young Adult Literature in a Multicultural Society. Introduction to the evaluation of literary materials for junior and senior high school, with emphasis on critical approaches and the multicultural features of schools and society. Restricted to enrollment in English degree program or consent of department.

ENGL485A - Teaching Writing & Lang Sec Sc 485A-3 Teaching Writing and Language in the Secondary School. Introduction to strategies for teaching English in the secondary school with emphasis on writing and language. Introduction to assessment of writing perception and skills. Assessment and tutoring of child from the community in writing. Ideally, course should be taken two semesters prior to student teaching. Restricted to: Admittance to Teacher Education Program through CoEHS.

ENGL485B - Teaching Reading & Lit Sec Sch 485B-3 Teaching Reading and Literature in the Secondary School. Introduction to strategies for teaching English in the secondary school with emphasis on critical reading skills and various genres of literature, including contemporary adolescent literature. Introduction to assessment of reading perception and skills. Assessment and tutoring of child from the community in reading. Ideally, course should be taken the semester prior to student teaching. Restricted to: Admittance to Teacher Education Program through CoEHS.

ENGL489 - One-to-One Teaching 489-3 One-to-One Teaching Practice and Theory. Perspectives on one-to-one teaching practices and collaborative theory in hands-on Writing Center experience. Prerequisites: Minimum grade of "B" in both ENGL 101 and ENGL 102 (or their equivalent). Special approval needed from the instructor.

ENGL490 - Expository Writing 490-3 Expository Writing. Advanced composition with emphasis on a variety of rhetorical strategies. Prerequisite: ENGL 290, 390 or equivalent.

ENGL491 - Technical Writing 491-3 Technical Writing. Introduction to technical communication across the curriculum; open to entire university community. Prerequisite: At least one of the following: ENGL 290, 291, 391, or equivalent.

ENGL492A - Advanced Fiction 492A-3 Creative Writing Seminar: Fiction. Advanced work in the writing and study of fiction, including readings, revisions, and workshopping. Prerequisites: ENGL 351 and ENGL 381B, or consent of instructor.

ENGL492B - Advanced Poetry 492B-3 Creative Writing Seminar: Poetry. Advanced work in the writing and study of poetry, including readings, revisions, and workshopping. Prerequisites: ENGL 352 and ENGL 382B, or consent of instructor.

ENGL492C - Advanced Nonfiction 492C-3 Creative Writing Seminar: Literary Nonfiction. Advanced work in the writing and study of literary nonfiction, including readings, revisions, and workshopping. Prerequisite: ENGL 384, or consent of instructor.

ENGL493 - Special Topics: Lit/Lang 493-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies.

ENGL493H - Special Topics Honors 493H-3 Special Topics in Literature and Language. (Same as ENGL 493) Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Prerequisites: ENGL 101 and 102 or ENGL 120H (undergraduates) with a grade of C or better.

ENGL494 - Cultural Analysis & Cinema 494-3 Cultural Analysis and Cinema. Cultural Studies exploring various and selected topics in European and American Cinema. A \$10 screening fee is required.

ENGL495 - Survey of Literary Criticism 495-3 A Survey of Literary Criticism. Introduction to the history of criticism and major recent schools of literary criticism and theory.

ENGL498 - Internship 498-3 to 9 Internships. For English majors only. Student may take up to nine semester hours to receive credit for internships that may be available at SIU Press, Special Collections, University Museum, Coal Center, Writing Center, Computer Lab and other faculty or unit-sponsored projects. Prerequisite: Written approval from department & academic unit and enrollment in English degree program or consent of department.

ENGL499 - Readings in Lit & Language 499-1 to 6 (1 to 3) Readings in Literature and Language. For English majors only. Prior written departmental approval required. May be repeated as the topic varies, up

to the maximum of six semester hours. Restricted to enrollment in English degree program or consent of department.

ENGL500 - Proseminar 500-3 Proseminar. Research methodology involved in writing a critical or scholarly work on literary topics for doctoral students in literature. Restricted to enrollment in English graduate degree program.

ENGL501 - Research in Composition 501-3 Research in Composition. Seminar in qualitative and quantitative research methods in composition and its teaching. Restricted to enrollment in English graduate degree program or consent of department.

ENGL502 - Teach College Composition 502-3 Teaching College Composition. An introduction to methods and materials related to the teaching of basic compositional skills on the college level. This course is required of all graduate assistants who have no previous college teaching experience or no familiarity with basic research techniques.

ENGL503 - Professional Development 503-2 Professional Development. Theory and practice for teaching composition in teacher-centered, workshop, discussion, and computer courses (Fall). Scholarly publication, course development, professional trends (Spring). Restricted to enrollment in English graduate degree program.

ENGL504 - Prof Development CW 504-1 Professional Development in Creative Writing. Practicum in preparation and submission of creative work for publication, and in preparation for and application for writers' conferences, fellowships, and internships in creative writing. Restricted to and required for first-semester MFA candidates.

ENGL506 - Old & Middle English Studies 506-3 to 12 Old and Middle English Studies. Seminars on various topics from Old and Middle English literature. May be repeated only with different topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department.

ENGL510 - Renaissance Studies 510-3 to 12 Renaissance Studies. Seminars in varying topics concerned with the literature of the 16th and 17th centuries and the drama of Shakespeare. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department.

ENGL516 - Restoration & 18th C Studies 516-3 to 12 Restoration and 18th Century Studies. Seminars in varying topics concerning the literature of the period. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department.

ENGL530 - 19th Century English Lit 530-3 to 12 19th Century English Literature. Seminars in various topics concerning the literature of the Romantic and Victorian periods. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department.

ENGL533 - American Lit Before 1900 533-3 to 12 American Literature Before 1900. Seminars in varying topics. May be repeated only with different topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department.

ENGL539 - American Lit After 1900 539-3 to 12 American Literature After 1900. Seminars in varying topics. May be repeated only with different topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department.

ENGL550 - Modern British Lit 550-3 to 12 Modern British Literature. Seminars in varying topics concerning Modern British literature. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department.

ENGL555 - Irish Studies 555-3 to 12 Irish Studies. Seminars on varying topics in Irish and Irish immigration studies; interdisciplinary/cultural studies approaches. May be repeated only with different

topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department.

ENGL579 - Studies in Modern Lit 579-3 to 12 (3 per topic) Studies in Modern Literature. May be repeated only if the topic varies, and with consent of department. Restricted to enrollment in an English degree program or consent of department.

ENGL581 - Problems: Teaching English 581-3 to 9 (3 per topic) Problems in Teaching English. May be repeated only if the topic varies, and with consent of department. Restricted to enrollment in an English degree program or consent of department.

ENGL582 - Issues in WPA 582-3 Issues in Writing Program Administration. Seminars in varying topics concerning writing program administration. May be repeated only with different topics and the consent of department.

ENGL583I - WPA Internship 583I-3 Internship in Writing Program Administration. An internship in WPA builds on four components: readings, activities or job tasks, written tasks, and a portfolio of artifacts and reflections representing the experience. These internships provide opportunities for interested students to implement practically what they are learning through research and reading.

ENGL588 - Comp Exam Readings 588-3 Comprehensive Exam Readings. Preparatory for MA comprehensive exam. May be taken once only; grade of S/U. Restricted to enrollment in English program or consent of department. Restricted to MA students in English.

ENGL589 - Readings in Lit & Lang 589-3 to 12 Readings in Literature and Language. For English graduate students only. Prior written departmental approval required. May be repeated as the topic varies. Restricted to enrollment in an English degree program or consent of department.

ENGL591 - Seminar Literary Nonfiction 591-3 to 9 Seminar in Literary Nonfiction. Critical reading and analysis of one of the major forms of literary nonfiction (biography, autobiography, popular science, the essay, literary journalism, and travel narratives). May be repeated only with different topics and the consent of the department. Special approval needed from the instructor.

ENGL592 - Creative Writing Seminar 592-4 Creative Writing Seminar. Advanced workshops offered in both fiction and poetry. Class content derives primarily from student's work. Genre announced in advance. May be repeated with consent of department. Restricted to enrollment in English MFA program or consent of department.

ENGL593 - Special Topics 593-3 to 12 Special Topics. Seminars in varying topics concerning language and literature. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department.

ENGL594 - Contemporary Literature 594-4-8 Contemporary Literature Seminar. Advanced seminars offered in both contemporary poetry and contemporary fiction. Taught by creative writers and designed for students concentrating in creative writing. Restricted to enrollment in English MFA program or consent of department. May be repeated for credit with different section numbers.

ENGL595 - Independent Readings 595-1 to 9 Independent Readings. Preparatory for preliminary examinations for doctoral students in English. May be taken once only, grade of S/U, according to the result of the preliminary examination.

ENGL596 - Language Studies 596-3 to 12 Language Studies. Seminars in varying topics concerning rhetoric, grammar and literacy. May be repeated only with different topics and the consent of the department. Restricted to enrollment in English graduate degree program or consent of department.

ENGL597 - Composition Theory 597-3 Composition Theory. Historical and analytical approaches to theories of discourse, theories of composing and theories of pedagogy. Prerequisite: ENGL 502 or equivalent.

ENGL598 - Literary Theory 598-3 to 12 Studies in Issues of Literary Theory. Seminars on various issues of literary theory. May be repeated only with different topics and the consent of the department. Restricted to enrollment in an English degree program or consent of department.

ENGL599 - Thesis 599-3 Thesis. For Masters' students who elect to write a thesis in lieu of one three hour graduate course. Prerequisite: successful completion of 15 hours of graduate work on the Master's degree. Special approval needed from the thesis director. Restricted to enrollment in an English degree program or consent of department.

ENGL600 - Dissertation 600-1 to 36 (1 to 16 per semester) Dissertation.

ENGL601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

ENGL699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

English Faculty

Amos, Mark A., Associate Professor, Ph.D., Duke University, 1994.
Anthony, David J., Associate Professor, Ph.D., University of Michigan, 1998.
Appleby, Bruce C., Professor, Emeritus, Ph.D., University of Iowa, 1967.
Benedict, Pinckney, Professor, M.F.A. (Creative Writing) University of Iowa Writers' Workshop, 1988.
Bennett, Paula B., Professor, Emerita, Ph.D., Columbia University, 1970.
Bogumil, Mary L., Associate Professor, Ph.D., University of South Florida, 1988.
Boulukos, George E., Associate Professor, Ph.D., University of Texas at Austin, 1998.
Brunner, Edward J., Professor, Ph.D., University of Iowa, 1974.
Chandler, Anne K. Associate Professor, Ph.D., Duke University, 1995.
Cogie, Jane, Associate Professor, Emerita, Ph.D., University of Iowa, 1984, Adjunct Graduate Faculty
Collins, K. K., Professor and Distinguished Teacher, Ph.D., Vanderbilt University, 1976.
Dively, Ronda L., Professor, D.A., Illinois State University, 1994.
Donow, Herbert S., Professor, Emeritus, Ph.D., University of Iowa, 1966.
Dougherty, Jane Elizabeth, Associate Professor, Ph.D., Tufts University, 2001.
Fanning, Charles, Professor, Emeritus, Ph.D., University of Pennsylvania, 1972.
Fox, Robert Elliot, Professor, Ph.D., SUNY at Buffalo, 1976.
Goodin, George V., Associate Professor, Emeritus, Ph.D., University of Illinois, 1962.
Griffin, Robert P., Associate Professor, Emeritus, Ph.D., University of Connecticut, 1965.
Howell, John M., Professor, Emeritus, Ph.D., Tulane University, 1963.
Humphries, Michael L., Associate Professor, Ph.D., The Claremont Graduate School, 1990.
Jones, Rodney G., Professor, Emeritus, M.F.A., University of North Carolina at Greensboro, 1973.
Jordan, Judy, Associate Professor, M.F.A. (Poetry), University of Virginia, 1995; M.F.A. (Fiction), University of Utah, 2000.
Joseph, Allison, Associate Professor, M.F.A., Indiana University, 1992.
Klaver, Elizabeth T., Professor, Ph.D., University of California at Riverside, 1990.
Kvernes, David M., Assistant Professor, Emeritus, Ph.D., University of Minnesota, 1967.
Lamb, Mary E., Professor, Emerita, Ph.D., Columbia University, 1976.
Lawson, Richard A., Professor, Emeritus, Ph.D., Tulane University, 1966.
Little, Judy Ruth, Professor, Emerita, Ph.D., University of Nebraska, 1969.
Lordan, E. Beth, Professor, M.F.A., Cornell University, 1987.
McClure, Lisa, Associate Professor, D.A., University of Michigan, 1988.
McEathron, Scott, Associate Professor, Ph.D., Duke University, 1993.
McGrath, Patrick, Assistant Professor, Ph.D., University of Illinois, 2015.
McNichols, Edward L., Assistant Professor, Emeritus, M.A., University of Detroit, 1958.
Molino, Michael R., Associate Professor, Ph.D., Marquette University, 1992.
Netzley, Ryan, Professor, Ph.D., Pennsylvania State University, 2002.
Perillo, Lucia Maria, Associate Professor, Emerita, M.A., Syracuse University, 1986.

Peterson, Richard F., Professor, Emeritus, Ph.D., Kent State University, 1969.
Rudnick, Hans H., Professor, Emeritus, Ph.D., University of Freiburg, Germany, 1966.
Schönhorn, Manuel S., Professor, Emeritus, Ph.D., University of Pennsylvania, 1963.
Shapiro, Joseph, Assistant Professor, Ph.D., Stanford University, 2011.
Williams, Tony, Professor, Ph.D., University of Manchester, 1974.

Engineering

Engineering Courses

ENGR110 - Engineering Orientation 110-1 Engineering Orientation. Orientation for first year, engineering students. Course is designed to increase students' understanding of engineering as a field of study and as a profession. Emphasis is placed upon becoming a team player in engineering and developing an effective strategy for academic success in mathematics, science and engineering courses. Restricted to first year engineering students or consent of instructor.

ENGR111A - Engr Learning Skills 111A-1 to 3 Engineering Learning Skills. Special approval needed from an Engineering Academic Advisor.

ENGR111B - Engr Learning Skills 111B-1 to 3 Engineering Learning Skills. Special approval needed from an Engineering Academic Advisor.

ENGR111C - Engr Learning Skills 111C-1 to 3 Engineering Learning Skills. Special approval needed from an Engineering Academic Advisor.

ENGR222 - Comp Methods-Engr, Tech 222-2 Computational Methods for Engineers and Technologists. Introduces the student to the use of digital computers in the solution of technical problems that are specifically designed for the engineering and technology student. Problem analysis, flowcharting, coding, diagnostics, execution, and solution verification are discussed. Programs written in C++ language. Prerequisite: Mathematics 111 or equivalent with C or better.

ENGR250 - Statics 250-3 Statics. Principles of statics; force systems; equilibrium of particles and rigid bodies; trusses; frames; 2-D centroids; friction; moments of inertia; distributed loads; 3-D centroids; internal forces; shear and bending moment diagrams. Mass moment of inertia. Prerequisite: MATH 150, prior or concurrent enrollment in PHYS 205A and PHYS 255A, all with a grade of C or better.

ENGR261 - Dynamics 261-3 Dynamics. Fundamentals of particle and rigid body dynamics, kinematics and kinetics of a single particle and system of particles, application of Newton's laws and energy and moment principles in solving problems involving particles or rigid bodies in planar motion. Introduction to kinetics of rigid bodies in three dimensions. Prerequisites: MATH 250, ENGR 250, and PHYS 205A, all with C or better.

ENGR296 - Software Tools for Engineers 296-2 Software Tools for Engineers. Engineers are problem solvers. Various tools and software are being used increasingly in both academia and industry for solving technologically challenging problems. The objective of this course is to i) introduce undergraduate students to a set of technical software that prove useful (and in many occasions essential) in many courses and projects at junior and senior levels, and ii) enhance students' problem-solving skills. Prerequisite: MATH 250.

ENGR301I - Humans & Their Environment 301I-3 Humans and Their Environment. (University Core Curriculum: Students with a catalog year prior to Summer, 2012 only) [IAI Course: L1 905] An introduction to the study of the relationship between humans, resource consumption, pollution and the resulting environment, the effects of current human pollution and resource consumption on the environmental quality of the future, the interrelation of human population resource consumption and pollution, methods

of minimizing resource consumption and human pollution through both technological controls and changes in human behavior. Prerequisite: high school chemistry or equivalent.

ENGR304I - Soc Hist of American Tech 304I-3 Social History of American Technology. (University Core Curriculum) Survey of some key technological transformations and their related social developments in the United States from colonial times to the present with emphasis on unequal effects on cultural groups defined by race, gender, and ethnicity.

ENGR305 - Archaeo-Engineering 305-3 Archaeo-Engineering. Archaeologists have discovered marvelous inventions from the ancient world, long before engineering was considered to have been founded as the profession it is today. How did ancient people measure time and location, travel, communicate, shelter, obtain food and water, or wage war? What propelled inventiveness? Some canonical discoveries have much to teach in terms of humanities and history as well as science and engineering. Using modern tools, feats of ancient engineering will be studied and modeled digitally or physically. Important engineering projects or inventions of the past covered such as sun dials, Stonehenge, Antikythera, Roman roads, siege machines and aqueducts. Lab fee of \$15 to help defray cost of expendables and software licenses used in modeling project.

ENGR335 - Electric Circuits 335-3 Electric Circuits. [IAI Course: EGR 931] Foundation course in electric circuits. Basic laws and concepts of linear circuits, analysis of AC and DC circuits by mesh and nodal methods, Thevenin's and Norton's theorems, superposition principle, and phasor notation, and transients. Prerequisite: Mathematics 250 with C or better.

ENGR350A - Mechanics of Materials 350A-3 Mechanics of Materials. Introduction to the mechanics of deformable bodies. Stress and strain, torsion, stresses and deflections in beams and columns, influence lines, statically indeterminate beams. Prerequisites: ENGR 250, MATH 250, PHYS 205A, PHYS 255A, all with C or better. Lab fee: \$30.

ENGR350B - Mechanics of Materials 350B-1 Mechanics of Materials. Laboratory only. For transfer students who have satisfied the lecture but not the laboratory component of the 350A requirement. Prerequisite: ENGR 350C with C or better. Lab fee: \$30.

ENGR350C - Mechanics of Materials 350C-2 Mechanics of Materials-Course Only Articulation. For transfer students articulation only. This course is used to designate that a student has completed ENGR 350A without a laboratory.

ENGR351 - Numerical Methods 351-3 Numerical Methods in Engineering. Overview of numerical procedures such as root finding, curve fitting, integration, solutions of simultaneous equations, and solutions of ordinary differential equations. Emphasis will be on applications of these techniques to problems in civil, environmental and mechanical engineering. Prerequisite: concurrent enrollment in or completion of MATH 305.

ENGR370A - Fluid Mechanics 370A-3 Fluid Mechanics. Fluid properties, fluid statics, fluid flow, governing equations, dimensional analysis and model-prototype relationships, closed conduit flow, open-channel flow. Introduction to numerical modeling. Prerequisite: ENGR 261 with C or better. Lab fee: \$30.

ENGR370B - Fluid Mechanics-Lab 370B-1 Fluid Mechanics-Laboratory Only. For transfer students who have satisfied the lecture but not the laboratory component of the ENGR 370A requirement. Prerequisite: ENGR 370C with C or better. Lab fee: \$30.

ENGR370C - Fluid Mechanics 370C-2 Fluid Mechanics-Course Only Articulation. For transfer students articulation only. This course is used to designate that a student has completed the lecture component of ENGR 370A without a laboratory.

ENGR492 - Special Investigations Engr 492-1 to 6 Special Investigations in Engineering. Individual projects and problems selected by student or instructor. Open to seniors only. Not for graduate credit. Special approval needed from the instructor.

ENGR521 - Prob & Stochastic Processes 521-3 Probability and Stochastic Processes for Engineers. (Same as ECE 551) Axioms of probability, random variables and vectors, joint distributions, correlation, conditional statistics, sequences of random variables, stochastic convergence, central limit theorem,

stochastic processes, stationarity, ergodicity, spectral analysis, and Markov processes. Restricted to graduate student status. Project-based fee: \$20 to help defray cost of software licenses.

ENGR522 - Intel Prop & Commercial 522-3 Intellectual Property and Commercialization. (Same as BA 537, LAW 633) Course teaches substance & practice of commercializing products of scientific & technical research. Provides a basic understanding of intellectual property laws in commercialization context & how those laws are applied in various fields of technology. Will learn how to value intangible assets, taking into account their commercial potential & legal status. Course will consider the legal & business issues surrounding marketing of products of research. Will prepare & negotiate license agreements. Will analyze legal & business issues surrounding whether & how to enforce intellectual property rights. Content & methods of course delivery & evaluation has been approved for provision by distance education.

ENGR530 - Engineering Data Acquisition 530-3 Engineering Data Acquisition: Theory and Practice. (Same as ECE 530) Theory of data acquisition and measurement systems. Criteria for selection of data acquisition hardware and software, instruments, sensors and other components for scientific and engineering experimentation. Methods for sampled data acquisition, signal conditioning, interpretation, analysis, and error estimation. Lab fee: \$60 to help defray cost of software licenses and equipment.

ENGR540 - Design Engr Experiments 540-3 Design of Engineering Experiments. Planning of experiments for laboratory and field studies, factorial designs, factorial designs at two levels, fractional factorial designs, response surface methods, mixture designs. Prerequisite: MNGE 417, or MATH 483, or equivalent, or consent of instructor.

ENGR545 - Adv Numerical Methods 545-3 Advanced Numerical Methods in Engineering. Engineering applications of linear and nonlinear equations, eigenvalue problems, interpolation and approximating functions and sets of data, numerical solutions of ordinary and partial differential equations. Prerequisite: ENGR 222 or equivalent, ENGR 351 or equivalent, and MATH 305 or consent of instructor.

ENGR580 - Seminar 580-1 Seminar. Study and presentation of research topics from students' own specialty areas within engineering and science. Graded S/U only. Restricted to enrollment in the Ph.D. in engineering science program or consent of instructor.

ENGR590 - Spec Inves Engr Science 590-1 to 3 Special Investigations in Engineering Science. Investigation of individual advanced projects and problems selected by student or instructor. Restricted to admission into Ph.D. program in engineering science.

ENGR592 - Engineering Co-op 592-1 to 3 Engineering Cooperative Education. Supervised work experience in industry, government or in a professional organization. Work must be directly related to student's program of study. Student works with on-site supervisor and faculty advisor. Activity report is required from the student and performance report is required from the employer. Enrollment requires Chair's approval. Hours do not count toward degree requirements. Mandatory Pass/Fail. Restricted to graduate standing.

ENGR593 - Special Topics in Engineering 593-3 Special Topics in Engineering. Studies of various special topics in the area of engineering science. Special approval needed from the instructor.

ENGR600 - Doctoral Dissertation 600-1 to 24 (1 to 16 per semester) Doctoral Dissertation. Dissertation research. Hours and credit to be arranged by director of graduate studies. Graded S/U only. Restricted to admission to Ph.D. in engineering science program.

ENGR601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

ENGR699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Environmental Studies

Welcome to Environmental Studies (ENVS)! Open to all Majors: you can add some “green” to any degree. The Environmental Studies minor is an excellent complement to any major, and serves to enhance your career opportunities. You earn an Environmental Studies minor through 15 credit hours of approved courses that draw from the expertise of faculty and departments across campus. The goal is to broaden your perspective, while allowing you to follow your individual interests. You will expand your viewpoint and gain new skills for environmental analysis. For example, you can learn more about environmental ethics and media, ecology and wildlife; environmental education and policies; green buildings and organizations. The possibilities to widen your knowledge base are nearly endless. This minor helps unify the theme of environmental studies, while creating individual paths for student success.

The Environmental Studies minor is built around one core course, three topic courses (Environment, Society, Skills), and one unifying final course.

Environmental Studies minor

Degree Requirements	Credit Hours
Core Course: GEOG 300I	3
Topic Courses - take one from each topic	9
Topic 1 - Environment: BIOL 307; CSEM 443; FOR 201; GEOG 104, GEOG 303I, GEOG 330; GEOL 220, GEOL 221; HORT 238, HORT 328A, HORT 462, HORT 469; PLB 200, PLB 301I; ZOOL 312I.	
Topic 2 - Society: ANTH 370, ANTH 410K; CMST 412; FOR 285, FOR 325; GEOG 100, GEOG 103, GEOG 320; HIST 457; MGMT 474; PH 488; PHIL 307i, PHIL 375; SOC 386.	
Topic 3 - Skills: ARC 231, ARC 314I; CP 440; FOR 420, FOR 423; GEOG 310I, GEOG 401; JRNL 301, JRNL 396; KIN 416; MKTG 304; POLS 340; REC 301; RTD 463; TRM 440.	
Final Unifying Course:GEOG 470	3
Total	15

Electronic Systems Technologies

The Bachelor of Science in Electronic Systems Technologies (EST) provides advanced technical and managerial coursework for students pursuing careers in the electronics industry. The program

allows students the flexibility to choose a curriculum that will complement their career goals with their educational and work experience. Graduates with an EST degree possess the skills required of the technologist entering areas such as biomedical equipment technology, communications and networking technology, and automation and control technology. The Electronics Management Specialization (ELM) within the EST degree is well suited for technicians or technologists with coursework and work experience seeking advancement or placement in managerial roles in the electronics industry.

The Electronic Systems Technologies degree is a baccalaureate completion degree (300/400-level coursework for a 2+2 degree) designed as a path for students who have completed Electronic Technology AAS degree or equivalent. Students with other types of education and training can also be admitted, including those with military training. Students entering the completion degree are expected to have had coursework, documented training or work experience in the following technical subject areas:

DC/AC Electronics Fundamentals

Solid State Electronics Fundamentals

Digital Electronics Fundamentals

PC Troubleshooting & Repair

LAN Networking

A Programming Language

Information Security Fundamentals

Students lacking formal education or documented experience in the listed areas may meet these requirements through a variety of methods. The Electronics Fundamentals requirements, with content equivalent to EST 101, EST 102 and EST 201, may be met through additional community college coursework, proficiency exams, or documented training. The PC Troubleshooting, LAN networking and programming language requirements may be met through SIU courses ISAT 121, ISAT 216, ISAT 224 and IST 209 respectively, available proficiency exams, or community college coursework. Please see our website for additional entry information and guidance (<http://isat.siu.edu/undergraduate/electronic-technology/>).

In addition, transfer credit for University Core Curriculum requirements varies depending on previous coursework. An individual who has earned an AAS degree also may qualify for the Southern Illinois University Carbondale Capstone Option. Capstone gives maximum credit for previous academic and work experience in the student's occupational field and reduces the University Core Curriculum requirements.

The Electronic Systems Technologies program has a number of "Program Articulation Agreements" with electronics-related community college degree programs in order to facilitate the transfer of community college students to SIU. These agreements take full advantage of the Capstone Option for admission to the Bachelor of Science in Electronic Systems Technologies. Please check with your guidance counselor at the community college on the status of these articulation agreements.

If you have questions about how the degree requirements and articulation agreements apply to your personal situation, contact the community college program representative or the academic advisor in Electronic Systems Technologies at 618/ 453-7200 or through our website at <http://isat.siu.edu/undergraduate/electronic-technology/>.

Bachelor of Science Degree in Electronic Systems Technologies, College of Applied Sciences and Arts

Electronic Systems Technologies Major with an Electronic Management Specialization

An Electronic Systems Technologies (EST) major who chooses the Electronics Management (ELM) Specialization is provided a curriculum focused on the skills and knowledge necessary to effectively integrate current and emerging technology into the work place. The electronic devices are being transformed to smart objects with embedded sensors, onboard data processing capability, and a means of communication especially equipped with the Internet. This rapidly evolving field called the Internet of Things (IoT) needs understanding of Cyber Security and Network & System Administration of modern electronic systems.

Graduates will possess the technical, managerial and supervisory skills needed for entry-level positions in the electronics field with the increased potential in Cyber Security and Management for vertical mobility in today's workforce.

The process of evaluating and acquiring new and existing technologies, planning and implementing security measures, maintaining and managing technological systems and effectively utilizing human resources will be studied. The graduate from this specialization will be able to communicate effectively and coordinate the efforts of skilled technicians in managing complex cyber-physical systems from increasing cyber attacks. Skills acquired will allow the graduate to train people in the use and maintenance of complex cyber-physical systems, plan and prioritize efforts to maximize the use of technological resources, and explain technical ideas to nontechnical personnel. Their responsibilities are continually expanding as the number of cyber attacks increases and more smart objects are connected.

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Approved Technical or Career Electives ²	33
DC/AC Electronics	
Solid State Electronics	
Digital Electronics	
ISAT 216 and ISAT 224	
IST 209	
Other approved coursework	15
Requirements for Major in Electronic Systems Technologies with a specialization in Electronics Management	48
EST Core Requirements	12
EST 340, EST 341, EST 451	9
ISAT 366	3
ELM Specialization Requirements: EST 365, EST 385, EST 387, EST 388, IST 404	15
EST Electives	21
Cyber Security	
EST 342, EST 404, ISAT 316, ISAT 335, ISAT 415, ISAT 460	
Network and System Administration	
EST 404, ISAT 327, ISAT 335, ISAT 411, ISAT 415, ISAT 418	

Degree Requirements	Credit Hours
Internet of Things (IoT)	
EST 308, EST 342, EST 343, EST 404, EST 407, ISAT 327	
Internship or independent studies or approved equivalent (maximum 6)	
Total	120

1 The Capstone Option reduces University Core Curriculum requirements.

2 DC/AC, Solid State & Digital Electronics Electives may be satisfied through documented coursework, documented training, available proficiency exams or approved seminars. ISAT 216, ISAT 224 and IST 209 prerequisites for EST Electives may be satisfied through documented coursework, documented training or available proficiency exams.

Electronic Systems Technologies Courses

EST100 - Intro to Electronics 100-3 Introduction to Electronics. This course is an introduction to the field of electronics technology designed for students who are not majoring in Electronic systems technologies. It examines the role of the electronics technician and teaches the fundamental concepts of electronics.

EST101 - DC-AC Circuit Analysis 101-3 DC-AC Circuit Analysis. This course covers the theory and application of passive DC and AC circuits presented in a comprehensive manner using qualitative and quantitative methods. Theoretical topics such as Ohm's Law and Kirchhoff's Law are applied to analyze DC and AC circuits. Co-requisite: EST 111 and MATH 101 or MATH 108 or higher. Prerequisite: MATH 101 or MATH 108 or higher.

EST102 - Electronic Circuits Theory 102-3 Electronic Circuits Theory. This course presents the use and analysis of active and passive devices in electronic circuits. Semiconductor diodes, bipolar junction transistors and field effect transistors are discussed in circuit applications which include power supplies, amplifiers and switching circuits. Prerequisite: EST 101. Co-requisite: EST 112.

EST111 - DC-AC Circuit Lab 111-3 DC-AC Circuit Analysis Laboratory. This course introduces fundamental skills required by the electronics technicians. The fundamental laws of passive DC-AC circuits will be verified with experiments. Test equipment including the oscilloscope, multimeter, power supply, and signal generator will be used to analyze and troubleshoot electronic circuits. Six contact hours. Concurrent enrollment in EST 101 or consent of school. Lab fee: \$85 for DC-AC parts kit.

EST112 - Electronics Circuits Lab 112-3 Electronics Circuits Laboratory. This course introduces the fundamental operation, application and troubleshooting techniques associated with semiconductor devices. Formulas and theories associated with the operation of semiconductor circuits will be verified using the oscilloscope, multimeter, power supply and signal generator. Experiments demonstrate the application of diode, transistor amplifier and transistor switching circuits. Six contact hours. Prerequisite: EST 111. Co-requisite: EST 102.

EST201 - Digital Circuits Theory 201-3 Digital Circuits Theory. This course presents the concepts of digital circuits that make up systems such as numeric control, computers and communications networks. The application and analysis of counters, registers, arithmetic logic circuits, analog conversion circuits, memory circuits and basic microprocessor systems are presented. Prerequisite: EST 102.

EST211 - Digital Circuits Lab 211-3 Digital Circuits Laboratory. This course provides practical experience assembling, testing, and troubleshooting counters, registers, arithmetic logic circuits, analog conversion circuits, memory circuits and basic microprocessor systems. An emphasis is placed on the

use of data books, safety and troubleshooting. Six contact hours. Prerequisite: EST 112 or consent of school. Lab Fee: \$25 for digital electronics parts kit.

EST223 - Certification Test Prep 223-1 to 3 Electronics Certification Test Preparation. This course will provide the student an opportunity to prepare for industry recognized certification tests. This is an individualized self-paced course. Certification tests are in the areas of communications technology, biomedical technology, industrial electronics technology and computer technology. The student will be responsible for all fees associated with taking the certification tests and purchasing reference materials that are not provided by the program.

EST258 - Electronics Work Experience 258-1 to 30 Electronics Work Experience. Credit granted for prior job skills, management-worker relations and supervisory experience while employed in the electronics industry. Credit will be established by departmental evaluation. This credit may be applied only at the 100 and 200 level unless otherwise determined by the department chair. Restricted to electronic systems technologies majors.

EST259 - Electronics Occupational Educ 259-1 to 60 Electronics Occupational Education. A designation for credit granted for past occupational educational experiences related to electronic systems technologies. Credit will be established by departmental evaluation. This credit may be applied only at the 100 and 200 level unless otherwise determined by the department chair. Restricted to electronic systems technologies majors.

EST300 - Electronic Mgmt Research 300-3 Introduction to Electronic Systems Technologies Research. An introduction to library resources, electronic media resources and formal academic writing styles common to electronic systems technologies research. Introduction to basic theories, concepts and practices pertinent to electronic systems technologies. May be independent study. Restricted to electronic systems technologies majors.

EST301 - Intro Biomedical Instr 301-3 Introduction to Biomedical Instrumentation. This course covers a broad range of Biomedical Technician material including the maintenance, calibration, safe operation and management of biomedical equipment. Also covered are theory of operation, terminology, and underlying principles of biomedical equipment. Co-requisite: EST 311. Restricted to EST majors or consent of instructor.

EST302 - Optical Electronics 302-3 Optical Electronics. This course is designed to provide the theory and practice necessary to introduce the student to the broad fields of fiber optics and optoelectronics. Fiber optics is the optical technology concerned with the transmission of radiant power through transparent fibers, and optoelectronics pertains to devices that emit, modify or respond to optical radiation. Applications of fiber optics and optoelectronics to communications, imaging and sensing will be emphasized, with a concentration on communications applications. Lecture and laboratory. Restricted to Electronic Systems Technologies major or consent of school.

EST305 - Troubleshoot and Maintenance 305-3 Electronic Troubleshooting and Maintenance. This course covers troubleshooting and maintenance of electronic and interrelated systems. Formalized troubleshooting and preventative maintenance procedures will be covered with hands on theoretical exercises. Other areas include customer relations, documentation and proper test equipment usage. Lecture and Laboratory. Restricted to Electronic Systems Technologies major or consent of school.

EST306 - Technical Drawing 306-3 Technical Drawing. The theory and practice of computer-aided drawing and design encountered in the electrical/electronics industry. The course develops the competencies and skills necessary to produce the type of graphic documentation utilized in the field. Synthesis and design applications are also covered.

EST307 - Automation and Control Tech 307-3 Automation and Control Technology. The selection, programming, installation, maintenance, and troubleshooting of Programmable Logic Controllers (PLCs) and Programmable Automation Controllers (PACs) related industrial control devices. Individual components will be defined and examined with respect to the overall control system. Safety and standard practices will be emphasized throughout the course. Lecture and Laboratory.

EST308 - Device Interfacing & Control 308-3 Device Interfacing and Control. (Same as ISAT 308) This course provides a basis for electronic device interfacing for systems control. The principles of voltage,

current, power, diodes, transistors, and other essential electronic devices will be covered as well as digital system principles. A major focus of the course will be interfacing to a micro-controller a variety of sensors and control devices necessary for system monitor and control. A grade of C or better required. Lecture and Lab. Prerequisite: IST 209 with a grade of C or better.

EST310 - IT Integration & Support 310-3 Information Technology Integration & Support. This course uses a lab/lecture approach designed to give students background information and "hands-on" experience with personal computers, network systems, and related technologies. An introductory presentation includes information on proprietary and open operating systems, basic networking and PC hardware components, peripheral devices, digital video and audio technologies, and local area network concepts and configurations. Students will disassemble and reassemble PCs, add and remove hardware devices, configure settings and drivers, and become familiar with basic troubleshooting practices. Emerging related and advanced technologies will also be explored.

EST311 - Biomedical Instrumentn Lab 311-3 Biomedical Instrumentation Laboratory. This course provides hands-on experience with the types of equipment encountered by a typical biomedical electronic technician (BMET). The exercises will teach the theory of operation, equipment safety, calibration and maintenance of biomedical equipment. Co-requisite: EST 301. Restricted to EST majors or consent of instructor.

EST317 - Industrial HMI 317-3 Industrial Human Machine Interfacing. The selection, programming, installation, maintenance, and troubleshooting of industrial Human Machine Interface (HMI) equipment. Programming of Programmable Logic Controllers (PLC) for HMI will be included. Individual components will be defined and examined with respect to the overall control system. Safety and standard practices will be emphasized throughout the course. Lecture and laboratory. Prerequisite: EST 307.

EST319 - Internship 319-1 to 15 Electronic Occupations Internship. Students will be assigned to a University approved program to engage in activities related to the Electronic Systems Technologies program and the student's career objectives. The student will perform duties as assigned by the work supervisor and the internship coordinator. Mandatory Pass/Fail. Special approval needed from the instructor.

EST320 - Elect Occupation Coop Educ 320-1 to 12 Electronics Occupations Cooperative Education. Each student will participate in a departmentally approved cooperative education program that includes formal instruction, training and/or career-related work experience. Students receive a salary or wages and engage in prearranged assignments related to their academic program and career objectives. Department faculty evaluation, cooperative agency student performance evaluations and student reports are required. Hours and credit to be individually arranged. Mandatory Pass/Fail. Special approval needed from the instructor.

EST338 - Alt & Renewable Energy Tech 338-3 Alternative and Renewable Energy Technology. This course examines alternative and renewable energy technologies and applications. Power generation from solar, wind, geothermal, biomass, and fuel cell technologies will be discussed and reinforced with laboratory demonstrations. Power electronics will be reviewed with an emphasis on energy conservation and energy harvesting technologies. Lecture and laboratory.

EST340 - App Solid State Devices 340-3 Application of Solid State Devices. Lecture/lab. This course covers the characteristics of semiconductor materials, diodes, power supplies, thyristors, BJTs, FETs, and Op Amps. These devices will be applied to various amplifiers (including multistage), active filters, oscillators, and linear regulators and the student will perform in-depth circuit analysis on these circuits. Restricted to EST majors.

EST341 - Digital Applications 341-3 Digital Applications. Lecture/lab. This course covers digital combinational logic and simplification in order to create state machines that may be implemented in programmable logic devices or microprocessors/DSPs. The second part of this course (data synthesis) examines data acquisition, transmission, microcontroller/microcomputer architecture, and digital logic families. Restricted to ISAT majors.

EST342 - Device Programming for IoT 342-3 Device Programming for IoT. (Same as ISAT 342) This course provides a hands-on introduction to programmable devices that may be used with the Internet of Things (IoT). The course covers essential electronics, device interfacing and programming

for local monitoring and control. The use of Wi-Fi or Ethernet for monitoring and control via the Internet will be explored as well as security methods for IoT devices. Students will be required to purchase a microcontroller system ranging in cost between \$80-100. Lecture and Laboratory. A grade of C or better is required. Prerequisite: IST 209 with a grade of C or better. Restricted to EST major.

EST343 - IoT OS Platforms 343-3 Internet of Things (IoT) Operating System Platforms. (Same as ISAT 343) The selection, configuration, installation, maintenance, and troubleshooting of industrial peer-to-peer and device level networks will be examined with the purpose of forming a complete industrial control network structure. The integration of various industrial control devices, components, and automation cells to form a complete automated control system will be examined. Safety and standard practices will be emphasized throughout the course. Students will be required to purchase a microcontroller system ranging in cost between \$100-130. Lecture and Laboratory. A grade of C or better is required. Prerequisite: ISAT 327 with a grade of C or better.

EST350 - Technical Career Subjects 350-1 to 32 Technical Career Subjects. This course provides the student with in-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions and health service occupations offered through various workshops, special short courses, and seminars. Hours and credits to be individually arranged. This course may be classified as independent study. Special approval needed from the instructor. A grade of C or better is required.

EST351 - Readings in Elect Systems Tech 351-3 Readings in Electronic Systems Technologies. The use of written and electronic media resources relevant to electronic systems technologies and the development of an electronic systems technologies research bibliography. The use of bibliographic resources to produce written comparative or persuasive research reports. May be independent study. Prerequisite: EST 300. Restricted to electronic systems technologies majors.

EST358 - Work Experience Credit 358-1 to 30 Work Experience Credit. Credit will be granted via departmental evaluation of prior job skills, management-worker relations, and supervisory experience while employed in industry, business, the professions or service occupations. Credit will be established by school director evaluation. This credit may be applied only to the Major Requirements of the Electronic Systems Technologies degree. Restricted to EST major.

EST365 - Data Apps & Interpretation 365-3 Data Applications and Interpretation. (Same as ISAT 365) This course will give students an understanding of the basic principles and techniques involved in the statistical treatment of data, including the selection of data sources, the design of statistical studies, and the analysis, synthesis, and utilization of data. Students will gain experience in using data for decision-making in their respective professions. EST majors must earn a grade of C or better. Prerequisite: University Core Curriculum Mathematics with a grade of C or better.

EST385 - Fiscal Aspects of EST 385-3 Fiscal Aspects of Electronic Systems Technologies. An introduction to the types of fiscal problems encountered in the electronics industry. The course will address the diverse sizes and types of business within the field and will include an introduction to the accounting process. Emphasis will be given to financial management systems, financial analysis tools, cash flow management and budgeting procedures. Restricted to electronic systems technologies majors. A grade of C or better is required.

EST387 - Elect Ind Labor-Mgmt 387-3 Electronics Industry Labor-Management Relations. A study of economic situations that affect labor-management relations in electronics-related career fields. Study will include the evolution of labor relations in the American electronics industry and interactive differences in labor-management relations from a global perspective. Laws that are common to both union and non-union employees will be emphasized. Restricted to electronic systems technologies majors. A grade of C or better is required.

EST388 - Legal Aspects of Electronics 388-3 Legal Aspects of Electronics. An introduction to the types of legal problems encountered in the electronics industry to include American legal heritage and legal rights. The course will emphasize the nature and classification of contracts, warranties, product liabilities, consumer protection and applicable employment laws. Restricted to electronic systems technologies majors. A grade of C or better is required.

EST401 - Issues in Electronics Industry 401-3 Analysis of Issues in the Electronics Industry. The identification and study of current economic, regulatory or operational issues impacting the electronics industry. The use of both written and oral reports to present a critical analysis of selected topics. May be independent study. Not for graduate credit. Prerequisite: EST 300. Restricted to electronic systems technologies majors.

EST404 - Wireless Comms & Security 404-3 Wireless Communications and Security. (Same as ISAT 417) This course provides a comprehensive overview of wireless communications through an examination of the wireless channel, signal modulation, encoding and transmission techniques, antennae theory and error control. Uses of wireless technologies in local, personal and mobile networks will be examined. An emphasis will be placed on security measures and techniques in wireless communications. A grade of C or better is required. Prerequisite: ISAT 216 and ISAT 224, each with a grade of C or better. Restricted to EST major.

EST407 - Industrial Control & Security 407-3 Industrial Control and Security. (Same as ISAT 407) This course provides an in-depth look at control systems and networks particular to industrial processes. Security vulnerabilities and security measures to protect critical system will be explored. Upon completion of this course students will be able to perform risk assessment and make recommendations for threat detection monitoring of industrial control systems. Not for graduate credit. Grade of C or better required. Prerequisite: EST 404 with a grade of C or better.

EST411 - Imaging & Info Syst Healthcare 411-3 Imaging and Information Systems in Healthcare. Lecture/Lab. This course discusses radiation, radiographic imaging (X-ray, CT, MRI) and ultrasound. The student will also understand the processes of image formation, manipulation, and enhancement within the framework of a PACS/DICOM Healthcare Information System (HIS). BMET management issues and the use of computerized maintenance management systems will also be covered. Not for graduate credit. Prerequisite: EST 301 and EST 311 or consent of instructor. Co-requisite allowed: ISAT 335 or consent of instructor. Restricted to EST majors or consent of instructor.

EST420 - EST Coop Education 420-1 to 12 Electronic Systems Technologies Cooperative Education. Students may participate in a departmentally approved cooperative education program that includes formal instruction, training and/or career-related work experience. Students will receive a salary or wages and engage in prearranged assignments related to their academic program and career objectives. Department faculty evaluation, cooperative agency student performance evaluations and student reports are required. Hours and credit to be individually arranged. Mandatory Pass/Fail. Not for graduate credit. Special approval needed from the instructor.

EST441 - Career Development 441-3 Career Development for Electronics Managers. A study of elements to consider when seeking employment in an electronics career field. These elements include personal inventories and resumes, placement service and employment agencies, interviewing techniques, letters of application, references and employment testing. Emphasis will be placed on the roles of mentoring, membership in professional organizations, continuing education and other opportunities for professional growth throughout a career in the electronics industry. Each student will develop a portfolio including personal and professional information related to individual career goals. Not for graduate credit. Restricted to electronic systems technologies majors. A grade of C or better is required.

EST450 - Mgmt Problems in Elect Industr 450-3 Management Problems in the Electronics Industry. The identification and study of problems related to management within the electronics industry. The application of electronic systems technologies theories, concepts and practices to the identified management problems. The use of written and electronic media research resources to produce a written problem solving report. May be independent study. Not for graduate credit. Prerequisite: EST 351 or EST 401. Restricted to electronic systems technologies majors. A grade of C or better is required.

EST451 - Industry Operations Management 451-3 Industry Operations Management. Discusses operational management of technical industries. The course covers forecasting, system design, quality, supply chain/inventory management, scheduling, and project management. This course is reading and writing intensive, and reflects the College's Communication-Across-the-Curriculum initiative. Not for graduate credit. Prerequisite: ISAT 365 and ISAT 366 or consent of school. Restricted to senior status in EST.

Fashion Design and Merchandising

The fashion industry is known for rapid change and is characterized by new technology, globalization and changing consumer desires. The fashion industry employs millions of people and reflects the health of a nation's economy because of the millions of dollars spent by consumers for fashion goods. The fashion industry is composed of businesses that design, produce and sell a unique array of consumer goods known for seasonal changes in fabrics, colors and silhouettes. Fashion products are not exclusive to women's apparel. Rather, fashion production and sales are organized into several different product categories: men's, women's and children's apparel and accessories, cosmetics and fragrances, and home furnishings. A fashion career is for any individual who thrives on change.

The four-year curriculum in fashion design and merchandising offers the beginning level of education for those who intend to pursue a career in fashion. There are three specializations in the Fashion Design and Merchandising major: Fashion Design, Fashion Merchandising, and Fashion Stylist. Within each specialization, a structured sequencing of courses is included which provides for a gradual interactive development of required knowledge and skills. This preparation is combined with the University Core Curriculum courses to provide a comprehensive scholarly foundation for advancement.

A fast-paced atmosphere is created by the amount of information to be covered, the frequency of assignments, and the pressure of due dates. Successful students must be able to handle multiple projects simultaneously and manage their time wisely. While facilities are provided for use, cost for supplies, individual equipment and field trips necessary to the successful completion of the program are borne by the student. Due to variation in choice of individual materials used, it is impossible to predict the exact costs for each student. The Fashion Design and Merchandising program maintains the right to retain student work for exhibition or for records and accreditation purposes. Students are advised to assemble a photographic file of their work for their portfolios. All students in the fashion design and merchandising major are required to have a laptop computer at the beginning of the second semester freshman year.

Potential Occupations

Participation in work experience, internships, externships and volunteer activities is recommended to enhance the academic curriculum. In addition, educational travel opportunities are provided allowing students to visit major fashion market cities with on-site business appointments. Graduates who pursue advanced studies can attain more responsible positions with the possibility of rising to top professional levels.

Graduates of the fashion design specialization are prepared to design clothing, accessories and other soft goods. Some designers are self-employed and design for individual clients. Other designers cater to specialty stores or department stores. Most fashion designers, however, work for apparel manufacturers creating and adapting fashions for the mass market. Some examples of careers in this area include, but are not limited to, manufacturer's representative, sales representative, production manager, inventory controller, stylist, apparel designer, textile designer, pattern maker, customer service representative, fashion illustrator, costing engineer, technical services, government or private researcher, and computer-aided design (CAD) manager.

Fashion merchandising professionals operate at the wholesale or retail level in the fashion industry. Career placement is very high and is complemented by the work experience component of the program. Careers in fashion merchandising include, but are not limited to, account representative, personal shopper, wholesale buyer, retail buyer, independent wholesaler, sales manager, visual merchandiser, inventory planning and distribution analyst, manufacturer's representative, customer service management specialist, retail sales and sales support manager, and showroom coordinator.

Fashion stylists work for companies such as designers, fashion houses, magazines, newspapers, retailers, online merchandisers, catalog publishers, television and film production houses, public relations firms, advertising agencies, and music producers. Fashion stylists may work as wardrobe consultants for agents, celebrities (e.g., in the sports or entertainment industries), or wealthy clients to prepare their clients for important events. Many stylists establish their own businesses as independent contractors. They give seminars or conduct classes with individuals, groups, or companies to provide information

about fashion and accessories. Fashion stylists evaluate clients' physical attributes, lifestyle, and fashion style and recommend fashion choices that will assist clients to achieve and maintain their desired image. A fashion stylist has specific responsibilities for a photo shoot, fashion show, music video, film or event. Fashion stylists plan creative solutions to a design brief while working in teams composed of photographers, designers, lighting technicians, and set builders. They meet with directors or producers and gain a clear vision of the overall goal; they are then responsible for assembling apparel, accessories, props, and essentials for creating a desired image. Fashion stylists scout locations, create a mood by selecting and setting up appropriate props, fashions, accessories, and models to fit the theme. They coordinate colors and styles and ensure that everything is ready.

Fashion Design Specialization

In the fashion design specialization, students learn about all facets of the apparel and textile industries from raw materials to the consumer. This encompasses knowledge of textiles and fashion design from product development through promotion and distribution.

The curriculum focuses on fashion design, production and merchandising strategies to develop the skills necessary to work in the fashion industry. Courses provide instruction for students in all aspects of the industry including development and trends of national and foreign fashion; fibers, fabrics, and finishes basic to the selection, use and care of textiles; basic fashion production; current technology in computer-aided design; visual analysis of fashion; fashion sketching; pattern drafting; pattern grading; pattern-making techniques; draping; and history of fashion. In addition to knowledge of the fashion industry, students may obtain background and skills in art, history, journalism, theater, marketing, business management, production management, finance and accounting. A variety of opportunities are available to assess student learning in fashion design, production, and textiles, including comments on garments selected for the annual senior fashion show, senior portfolio review and evaluation from on-site field experience supervisors.

Fashion Merchandising Specialization

The fashion merchandising specialization offers in-depth study of the process of planning, negotiating, acquiring, selling and evaluating merchandise throughout the distribution channel. It is designed for students interested in product sales careers at the wholesale or retail level. Students acquire knowledge of merchandise, sales techniques, and trends in the market place and customer service. This specialization assumes a global perspective and is complemented by business courses to allow for career flexibility. In addition to knowledge of the fashion industry, students are encouraged to develop a background and related skills in art, marketing, or management. Because fashion production takes place worldwide, developing and/or enhancing writing and speaking skills in a second language such as Spanish, French, or Chinese is also encouraged.

Courses provide instruction to students in all aspects of fashion product sales – from product conception, sales floor visual merchandising plans, seasonal sales plan, and promotional campaigns. All courses include analytical skills necessary to interpret sales data and consumer behaviors. Fashion merchandising students are required to gain on-the-job work experience for course credit.

Fashion Stylist Specialization

The fashion stylist curriculum focuses on professional practices necessary to be successful as a fashion stylist. The different types of styling are covered and professional practices within each type are explained. The program is designed to include courses from across campus that will support the fashion curriculum. To allow students to customize their program to the particular types of styling in which they are interested, professional electives may be selected from specified classes in Cinema and Photography, Communication Studies, English, Journalism, Music, Radio, Television, & Digital Media, Sociology, and Theater. A wide range of projects are included in classes to provide students experience with different types of styling.

The fashion stylist specialization is designed so students can easily transfer into the program and within two to three years can earn a B.S. in Fashion Design and Merchandising with a Fashion Stylist specialization. Customized academic plans can be developed for licensed cosmetologists. Please contact the program director or advisor for further information.

Selective Admission and Grade Requirements

Prospective students attending another college or university prior to transferring to Southern Illinois University Carbondale should concentrate on completing courses articulated or approved as substitutes for Southern Illinois University Carbondale's University Core Curriculum requirements. Prior to taking courses that appear to equate to the professional sequence, the applicant should consult with a program representative.

Students must pass all Fashion Design & Merchandising prefix courses with a minimum grade of C in order to satisfy prerequisites and to graduate. If a student receives a grade of F three times in the same course, the course cannot be taken again. Students cannot repeat FDM Prefix courses in which they received a grade of C or better.

Bachelor of Science Degree in Fashion Design and Merchandising, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements - As per University requirements for baccalaureate degrees, but must include AD 207A, AD 207B, AD 207C (select two)	39
Requirements for Major in Fashion Design and Merchandising	81
Core requirements	33
The following courses are required of all Fashion Design and Merchandising majors: FDM 101, FDM 102, FDM 172, FDM 241, FDM 281, FDM 330, FDM 340, FDM 441, FDM 442, FDM 462, (FDM 431 or FDM 432 or FDM 433)	48
Total	120

Fashion Design Specialization

Degree Requirements	Credit Hours
Requirements for Fashion Design Specialization	36
To include FDM 111, FDM 112, FDM 121, FDM 251, FDM 252, FDM 272, FDM 311, FDM 351, FDM 352, FDM 451, FDM 452, (FDM 431 or FDM 432 or FDM 433)	6
Art and Design (Select)	6
Professional electives	6
Total	48

Fashion Merchandising Specialization

Degree Requirements	Credit Hours
Requirements for Fashion Merchandising Specialization	15
To include FDM 282, FDM 381, FDM 482, FDM 392 (or approved substitute), FDM 491,	15
ACCT 220	3
MGMT	3
PSYC 323 (Prerequisite: PSYC 102)	3
MKTG 304, MKTG 305, MKTG 363, MKTG 401 plus 3 additional hours in MKTG	15
Professional Electives	9
Total	48

Fashion Stylist Specialization

Degree Requirements	Credit Hours
Requirements for Fashion Stylist Specialization	48
To include FDM 121, (FDM 432 or FDM 433 or FDM 431), FDM 232, FDM 282	12
AD 110 Intro to Drawing I	3
Select from professional electives to equal 38 credits	38

Fashion Design and Merchandising Courses

FDM101 - Careers in Fashion 101-3 Careers in Fashion. Explores the wide range of careers and key activities at each level of the fashion industry; raw materials manufacturing, product development, apparel manufacturing, retailing, and promotion.

FDM102 - Basic Prin of Clothing Design 102-3 Basic Principles of Clothing Design. Course content will include aesthetic, cultural, historical, psychological and social aspects of the basic elements and principles of clothing design. Restricted to major in Fashion Design and Merchandising.

FDM111 - Fashion Production I 111-3 Fashion Production I. Beginning skills in fitting, construction, and pattern and fabric usage. Restricted to major in Fashion Design and Merchandising. Studio Fee: \$36.

FDM112 - Fashion Production II 112-3 Fashion Production II. Intermediate skills in fitting, construction, and pattern and fabric usage. Prerequisites: FDM 111. Restricted to major in Fashion Design and Merchandising. Studio Fee: \$36.

FDM121 - Fashion Illustration 121-3 Fashion Illustration. Introductory illustration course concentrating on developing skills necessary to create fashion illustrations and working drawings. Focus on designing apparel for women, men, and children. Prerequisite: AD 110.

FDM172 - Visual Comm in Fashion 172-3 Visual Communication in Fashion. Beginning skills in Adobe Illustrator and Adobe Photoshop for fashion rendering of story boards, trend boards, and product design. Prerequisite: FDM 101, FDM 102 with grades of C or better. Restricted to FDM major.

FDM232 - Fashion Styling 232-3 Fashion Styling. Consulting and working with a client in the capacity of a wardrobe stylist, including fit, clothing selection for a variety of body types, clothing selection for specific occasions and events, personalization of style/image. Prerequisite: FDM 101, 102, 172 with grades of C or better. Restricted to Fashion Design and Merchandising majors.

FDM241 - Textiles I 241-3 Textiles I. Introduction to the study of textiles with focus on fiber, fiber properties, legal and environmental issues in the textile industry. Restricted to majors in Fashion Design and Merchandising and Interior Design. Studio Fee: \$36.

FDM251 - Flat Patternmaking & Drafting 251-3 Flat Patternmaking and Drafting. Drafting and fitting basic patterns; making sloper; making styles through flat pattern manipulation and drafting; testing and refining patterns to provide perfect fit. Prerequisite: FDM 112 with a grade of C or better. Restricted to major in Fashion Design and Merchandising. To be taken concurrently with FDM 252. Studio Fee: \$36.

FDM252 - Draping 252-3 Draping. Application of draping principles and techniques. Prerequisite: FDM 112, 121 with grades of C or better. Must be taken concurrently with FDM 251. Restricted to major in Fashion Design and Merchandising. Studio Fee: \$36.

FDM258 - Work Experience 258-1 to 30 Work Experience. Credit granted for past work experience while employed in business, industry, labor, government service or military organizations. Credit determined by departmental evaluation. Prerequisite: completion of 12 semester hours of Fashion Design and Merchandising courses with C or better. Restricted to major in Fashion Design and Merchandising or consent of instructor and school director.

FDM259 - Occupational Education 259-1 to 60 Occupational Education. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by school director evaluation. This credit may only be applied at the 100- and 200-level for the fashion design and merchandising degree unless otherwise determined by the director.

FDM272 - Computer-Aided Apparel Design 272-3 Computer-Aided Apparel Design. Hands-on experience in computer patternmaking and grading. Prerequisite: FDM 251. Restricted to major in Fashion Design and Merchandising. Studio Fee: \$36.

FDM281 - Fashion Promotional Strategies 281-3 Fashion Promotional Strategies. The study of promotional techniques unique to the fashion industry. Emphasis is placed on methods used at the point-of-sale to sell merchandise to the final consumer. Promotional methods to include: sales floor layouts and design, personal selling and specialized customer service department. Prerequisite: FDM 101, 102 with grades of C or better. Restricted to major in Fashion Design and Merchandising.

FDM282 - Fashion Event Planning 282-3 Fashion Event Planning. The study of event planning, emphasis placed on fashion/stylist related events. Planning includes selecting and sourcing clothing, accessories, and other props, budgeting, establishing dates, selecting and reserving event sites, acquiring permits, working with vendors, and assessing the client's image and communication needs. Prerequisite: FDM 281. Restricted to Fashion Design and Merchandising majors.

FDM311 - Fashion Production III 311-3 Fashion Production III. Advanced skills in fitting, construction, patterning, and fabric usage. Introduction to apparel line development. Prerequisites: FDM 251 and FDM 252 with grades of C or better. Restricted to major in Fashion Design and Merchandising. Studio Fee: \$36.

FDM330 - Fashion Forecasting 330-3 Fashion Forecasting and Trend Analysis. Perform in-depth analysis of current and future trends in lifestyle, business, ready-to-wear, art, and other cultural, economic, marketing, political factors. Study techniques and procedures for identifying and forecasting fashion trends based on research and analysis. Prerequisite: FDM 101, 102. Restricted to Fashion Design and Merchandising majors.

FDM333 - Advanced Styling 333-3 Advanced Styling. This course will address current styling issues and techniques, with a hands-on approach to consulting and working with clients, photo shoot creation, portfolio building and the explorations of various styling career opportunities and expectations. Prerequisite: FDM 101, 102, 172, 232 with grades of C or better. Restricted to Fashion Design and Merchandising majors or consent of the instructor. Concurrent enrollment in FDM 472 allowed. Studio fee: \$36.

FDM340 - Textiles II 340-3 Textiles II. Advanced course in textiles focused on textile product performance due to the following factors: yarn classifications, fabrication methods, special finishes, dyeing and printing techniques. Prerequisite: FDM 241. Studio Fee: \$36.

FDM351 - Advanced Patternmaking 351-3 Advanced Patternmaking. Advanced patternmaking and draping skills applied to original designs. Prerequisite: FDM 121, 251, 252, 272, 311. Restricted to major in Fashion Design and Merchandising. Studio Fee: \$36.

FDM352 - Experimental Custom Apparel Design 352-3 Experimental Custom Apparel Design. Development of apparel to meet aesthetic, structural and functional needs; problem solving for exceptional proportions, rehabilitation, activity, performing arts, new technology, materials and environment. Prerequisite: FDM 121, 251, 252, 311. Restricted to major in Fashion Design and Merchandising. Studio Fee: \$36.

FDM381 - Fashion Merchandising Math 381-3 Fashion Merchandising Mathematics. A comprehensive introduction to the financial management of merchandising fashion goods: merchandising and retailing concepts, managerial planning and decision-making processes, and mathematical formulas used in retail operations. Prerequisite: FDM 101 and ACCT 220 with grades of C or better. Restricted to Fashion Design and Merchandising majors or consent of instructor.

FDM392 - Field Study I 392-1 to 3 Field Study I. Study of, and tours to apparel manufacturers, markets, museums, retailers, testing laboratories, textile mills, trade associations and other areas of interest within the softgoods industry. Variable credit with a maximum of six hours. Prerequisite: nine hours in Fashion Design and Merchandising. Restricted to major in Fashion Design and Merchandising. Mandatory Pass/Fail. Special approval needed from the instructor.

FDM398 - Independent Study I 398-1 to 3 Independent Study I. Independent study for qualified freshmen and sophomore students in fashion design, merchandising, and styling. Fashion Design and Merchandising. Restricted to major in Fashion Design and Merchandising or consent of instructor and school director.

FDM431 - Ethnic Dress 431-3 Ethnic Dress. The study of ethnic dress in non-western cultures, with attention to aesthetics, symbolism and uses of ethnic dress. Cultures studied may vary with each offering. May be repeated for credit.

FDM432 - Historic Clothing: Western 432-3 Historic Clothing: Western Cultures. Development of clothing in Western civilization to 1850. Consideration of social, economic, aesthetic factors and technical innovations influencing clothing.

FDM433 - Hist West Costume 1860-Present 433-3 History of Western Costume, 1860 to Present. Evolution of Western costume from 1860 through the present time. Emphasis on the interrelationship between costume, social, political, economic, and technical changes.

FDM441 - Fashion Product Analysis 441-3 Fashion Product Analysis. Examines how quality and value of apparel products are visually evaluated by industry and consumers. Prerequisite: FDM 101, 241.

FDM442 - Fashion Global Economy 442-3 Fashion Industry in the Global Economy. Emphasizes the issues and importance of the role the United States' softgoods industry plays in the global economy. Not

for graduate credit. Prerequisite: FDM 340. Restricted to major in Fashion Design and Merchandising or consent of instructor.

FDM451 - Senior Fashion Design Studio I 451-3 Senior Fashion Design Studio I. Design a line, write garment specifications and sequence of operations, determine work flow and calculate production costs. Prerequisites: FDM 121, 251, 252, 311. Restricted to major in Fashion Design and Merchandising. Mandatory Pass/Fail. Studio Fee: \$36.

FDM452 - Senior Fashion Design Studio II 452-3 Senior Fashion Design Studio II. Business principles of apparel design, including systems, forms and logistics of money and materials. Functions and responsibilities of the fashion designer. Career opportunities in the fashion industry. Prerequisite: FDM 121, 251, 252, 311, 451. Restricted to major in Fashion Design and Merchandising. Mandatory Pass/Fail. Studio Fee: \$36.

FDM462 - Fashion Motivation 462-3 Fashion Motivation. Psychological motivation for wearing clothing, societal functions of clothing, cultural differences in dress. Prerequisite: FDM 102 with a grade of C or better. Restricted to Fashion Design and Merchandising majors and senior standing or approval of instructor.

FDM472 - Professional Dev/Styling 472-3 Professional Development in Styling. Career and business principles for fashion stylists, including development and preparation for entry into the fashion stylist career. Prerequisite: FDM 333 or concurrent enrollment in FDM 333 with a grade of C or better. Restricted to major in Fashion Design & Merchandising or consent of instructor.

FDM482 - Fashion Merchandising 482-3 Fashion Merchandising. Focus on the entire process of fashion merchandising: strategic planning; branding; trend forecasting; consumer research; product development; buying, pricing, and costing; product sourcing or manufacturing; retail operations; and presentation to the consumer. Prerequisite: FDM 381 with a grade of C or better. Restricted to major in Fashion Design and Merchandising or consent of instructor. Not for graduate credit.

FDM491 - Personnel Issues in Fashion Retail 491-3 Personnel Issues in Fashion Retailing. Identification and examination of personnel matters and the job search process in the fashion retail workplace. Not for graduate credit. Prerequisite: FDM 101. Restricted to junior standing, and major in Fashion Design and Merchandising.

FDM492 - Practicum 492-1 to 3 Practicum. Application of work education skills and knowledge. Prerequisite: twenty hours in specialty (i.e., fashion design and/or fashion merchandising and/or fashion styling). Restricted to approval of school director. Restricted to major in Fashion Design and Merchandising. Mandatory Pass/Fail.

FDM495 - Field Study II 495-1 to 3 Field Study II. Approved fashion field trip to regional and national fashion conferences, fashion weeks, or special education and professional events for fashion students. Class may be repeated for a maximum of 6 earned credit hours. Restricted to approval of instructor. Restricted to major in Fashion Design and Merchandising. Mandatory Pass/Fail.

FDM496 - Professional Internship 496-1 to 6 Professional Internship. Provides a supervised experience in a professional setting in the fashion industry. Activities must be related to the student's academic program and career objectives. Reports and assignments are required to be completed by the student. Mandatory pass/fail. Class may be repeated for a maximum of 6 earned credit hours. Restricted to Fashion Design and Merchandising major and consent of supervising instructor.

FDM497 - Practicum 497-1 to 6 Practicum. Application of work education skills and knowledge. Cooperative arrangements with corporations and professional agencies to study under specialist. Prerequisite: twenty hours in specialty.

FDM498 - Independent Study II 498-1 to 3 Independent Study II. Independent study for qualified junior and senior students in fashion design, merchandising or styling. Restricted to major in Fashion Design and Merchandising or consent of instructor and school director.

Fashion Design and Merchandising Faculty

Cho, Siwon, Associate Professor, Ph. D., Virginia Tech, 2008.

Kidd, Laura K., Associate Professor and Program Director, Ph.D., Iowa State University, 1994.

Lee, Seung-Hee, Professor, Ph.D., The Ohio State University, 1998.

Workman, Jane, Professor, Emerita, Ph.D., Purdue University, 1982.

Fermentation Science Institute

Fermentation Science will prepare students for careers in fermentation-related industries and will provide graduates with the requisite background to pursue advanced studies in fermentation-related fields, including but not limited to brewing, distilling, and enology. The program provides interdisciplinary training drawing from departments in various colleges and the Fermentation Science Institute. Fermentation science involves basic and applied science in several core scientific areas, including microbiology, plant biology, food science and chemistry, as well as the more applied areas of the agricultural sciences.

Bachelor of Science Degree in Fermentation Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Requirements for Major in Fermentation Science	28
The following courses are required: FERM 100, FERM 101, FERM 390, FERM 460, FERM 462, FERM 491; HND 101, HND 356; choose nine (9) hours minimum from CHEM 180, CHEM 181, HORT 333, HORT 466, FERM 480, FERM 489	
Major Requirements in Science	47
The following courses are required: BIOL 211, BIOL 212, BIOL 213, MICR 301, CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212, CHEM 330, CHEM 339, CHEM 341; PHYS 203A, PHYS 253A, PHYS 203B, PHYS 253B; MATH 150, MATH 282;	
Major Requirements in Hospitality and Business	4
Choose four (4) hours minimum from HTA 202, HTA 206, HTA 335, ECON 240, MGMT 350	
Total	120

¹ A total of fifteen credit hours of major courses count toward the core.

Fermentation Science Institute Courses

FERM100 - Principles of Fermentation Sci 100-3 Principles of Fermentation Science. Principles of Fermentation Science is a survey course that covers the scientific, technological, and cultural aspects of fermentation. The course will survey various aspects of fermentation, ranging from historical and cultural implication of fermentation as a method to process and preserve food to the modern manufacture of alcoholic beverages, foods, pharmaceuticals, and the production of energy. The process of fermentation will be discussed from basic microbiological and biochemical perspectives, with an emphasis on understanding the physical and chemical changes that occur during the fermentation process. Fermentation topics that will be discussed include alcoholic beverages, food preservation and production, and energy production. Prerequisites: CHEM 200 and BIOL 200A or BIOL 211 or equivalent.

FERM101 - Fermentation Science Lab 101-1 Fermentation Science Laboratory. The laboratory complement to FERM 100, Principles of Fermentation Science. The laboratory will cover various aspects of fermentation in a hands-on experiential environment with an emphasis on the basic microbiological and biochemical changes that occur during the fermentation process. Co-requisite: FERM 100. Lab fee: \$60.

FERM390 - Fermentation Research 390-1 to 2 Fermentation Research. Research under the direction and supervision of a faculty advisor culminating in a written report. Special approval needed from the instructor.

FERM460 - Sensory Analysis 460-4 Sensory Analysis. The course covers the science of the human senses as applied to alcoholic beverages. The physiological and neurological basis of human sensing are covered from the perspective of detecting and identifying both desirable traits and perceived flaws in products. The concepts of experimental design and statistical analysis are covered, as well as practical aspects of designing and maintaining sensory panels. Two hours lecture and three hours laboratory per week. Prerequisite: CHEM 181 or HORT 333 with a grade of C or better or consent of instructor. Age Restricted: Students must be 21 years of age prior to first lab meeting. Lab Fee: \$45.

FERM462 - Yeast Science & Technology 462-4 Yeast Science and Technology. An in-depth look at yeast from the perspective of fermentation science, with an emphasis on brewing science and enology. The effects of genetics will be examined with respect to how various strains and genetic mutations affect the fermentation process and the quality of the final product. The course will emphasize yeast metabolism and the various parameters and conditions that affect fermentation processes. The techniques dealing with yeast collection, storage and culturing will be covered from both theoretical and practical perspectives. Lectures will be supplemented with hands-on laboratory experiments. Two hours lecture and four hours laboratory per week. Prerequisite: MICR 301 with a grade of C or better or consent of instructor. Lab Fee: \$60.

FERM480 - Advanced Brewing Science 480-4 Advanced Brewing Science and Analysis. An advanced coverage of concepts in brewing, providing in-depth coverage of beer, brewing and quality control processes. Students will gain an understanding of the raw materials used in the production of beer. Specific coverage will be given to the processing and effects of raw materials, technical and scientific aspects of the brewing process, and the various processes that occur during fermentation, conditioning and packaging. In addition, the concept of beer quality and methods of ensuring quality control will be covered in detail, including the various methods of analysis that are used in the brewing industry. Two hours lecture and four hours laboratory per week. Age Restricted: Students must be 21 years of age prior to the first class meeting. Prerequisite: CHEM 180, CHEM 181, FERM 100 and CHEM 330 all with grades of C or better or consent of instructor. Lab Fee: \$60.

FERM489 - Brewing and Distilling 489-3 Brewing and Distilling Technology. (Same as AGSE 489, PSAS 489) The primary focus of this course is to introduce basic facilities planning for operations of the brewing and distilling industry, and to gain management and technology insight in brewing/distilling production. Prerequisite: FERM 480 with a grade of C or better. Restricted to Junior/Senior standing in Ag Systems Technology or Fermentation Science and instructor approval.

FERM491 - Fermentation Internship 491-1 Fermentation Internship. Internship under the direction and supervision of a mentor in a professional capacity in a fermentation related industry. The internship must be approved by the director of the program.

Fermentation Science Institute Faculty

Kelly Bender, Associate Professor (Microbiology), Ph.D., Southern Illinois University Carbondale, 2003.

John Farrish, Assistant Professor (Animal Science, Food and Nutrition), Ph.D., University of Nevada-Las Vegas, 2010.

Yanna Liang, Associate Professor (Civil and Environmental Engineering), Ph.D., Utah State University, 2006.

David Lightfoot, Professor (Crop Soil and Environmental Management), Ph.D., University of Leeds, 1984.

Matthew McCarroll, Professor and Director (Fermentation Science Institute and Department of Chemistry and Biochemistry), Ph.D., University of Idaho, 1998.

Kevin Smith, Senior Lecturer (Department of Chemistry and Biochemistry), B.S., University of Southern Indiana, 1997.

Sylvia Smith, Associate Professor (Animal Science, Food and Nutrition), Ph.D., University of Tennessee, 2007.

Bradley H. Taylor, Associate Professor (Horticulture), Ph.D., Ohio State University, 1982.

Katherine Witrick, Assistant Professor (Fermentation Science Institute and Animal Science, Food and Nutrition), Ph.D., Virginia Polytechnic Institute and State University, 2012.

Finance

The financial implications of decisions in both business and government are becoming more complex. Within the firm, financial considerations permeate research, engineering, production, and marketing. Within governmental activities, sophisticated financial techniques are becoming increasingly important. The financial executive thus takes a key role in the successful management of both business and governmental operations.

The finance curriculum offers three areas of specialization to meet the varied interests of students: (1) financial management, (2) financial institutions and (3) investments. The financial management program provides the background for a career in the financial operations of business firms and public institutions. The financial institutions specialization is designed for those interested in the operations of financial intermediaries and financial markets. The investments concentration is designed for those interested in Security Analysis and Portfolio Management. Certain courses may require the purchase of additional materials.

A major in Finance requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for the Finance major* (as described below), and students must earn a minimum 2.0 grade point average for those major courses. For finance majors and minors, Finance courses completed more than seven calendar years prior to the current term must be repeated (FIN 208, 270, 280, and 380 are excluded from this requirement).

The Capstone Option for Transfer Students

The Capstone Option is available to students who have earned an Associate in Applied Science (AAS) degree or have the equivalent and who have a cumulative 2.0/4.0 GPA on all accredited coursework prior to the completion of the AAS, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. See the Capstone Option section for information. Students who apply for the Capstone Option will work with the College of Business Advisement Office for approval of the Capstone Option and will complete a personal contract for a degree completion plan.

Differential Tuition

The College of Business assesses College of Business majors a differential tuition surcharge of 15% of applicable tuition for declared College of Business majors. The College of Business has a "minor program

fee” for other than College of Business majors that is equal to 15% of 15 credit hours of applicable tuition for declared College of Business minors.

Bachelor of Science Degree in Finance, College of Business

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Professional Business Core	47
Requirements for Major in Finance*	27
*Minimum grade of C required for all classes in major area. FIN 331, FIN 341, FIN 361, and ACCT 321 or ACCT 331	12
Specialization (choose one)	15
Financial Management: FIN 462, FIN 463 and three of the following: FIN 432, FIN 433, FIN 434, FIN 449, FIN 464, FIN 469, FIN 495 Financial Institutions: FIN 449; Select four: FIN 432, FIN 433, FIN 434, FIN 462, FIN 464, FIN 469, FIN 495 or FIN 320 and FIN 322; Select three: FIN 432, FIN 433, FIN 449, FIN 464, FIN 495 Investments: FIN 432, FIN 433 and three of the following: FIN 434, FIN 449, FIN 462, FIN 463, FIN 464, FIN 469, FIN 495	
Electives ¹	7
Total	120

¹ 120 semester hours are required for graduation. Any additional hours of college level credit can be used to equal minimum 120 semester hours required for degree.

Finance Minor

A minor in Finance consists of a minimum of 12 semester hours.

Degree Requirements	Credit Hours
Requirements for a minor in Finance	12
FIN 330 Specialization: (choose one) Financial Institutions: FIN 331, FIN 341 and FIN 449 Financial Management: FIN 361, FIN 462 and FIN 463 Investments: FIN 331, FIN 432 and FIN 433	

Prerequisites for these classes must also be satisfied. At least nine of the twelve semester hours must be taken at Southern Illinois University Carbondale. An advisor within the College of Business must be consulted before selecting this field as a minor.

A minor from the College of Business requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for their minor, and students must earn a minimum 2.0 grade point average for those minor courses.

Finance Courses

FIN200 - Personal Finance 200-3 Personal Finance. (University Core Curriculum) An introduction to the problems of personal financial asset management, including income and expense budgeting. Emphasis also placed on consumer credit, insurance, investments, home ownership, and taxation. Will not count toward a major in finance.

FIN208 - Business Data Analysis 208-3 Business Data Analysis. [IAI Course: BUS 901] (Same as ACCT 208 and MGMT 208) Uses of data in policy formulation are discussed. Emphasis is placed on the conversion of raw information into statistics, which are useful to the decision-maker. Problems stress solution to questions typically raised in businesses. Prerequisite: MATH 139.

FIN270 - Legal & Social Environment 270-3 The Legal and Social Environment of Business. An examination of the legal, social, and political forces that influence business and businessmen. Particular attention to the role of law as an agency of social control in the modern business society. Restriction: sophomore standing or higher.

FIN280 - Business Law I 280-3 Business Law I. Legal problems arising from situations involving contracts and agency and business organizations. Not pass/fail for College of Business majors. Restriction: sophomore standing or higher.

FIN310 - Insurance 310-3 Insurance. Fundamentals of insurance and risk management including a study of selected insurance contracts and alternative methods of controlling risk exposures. Restrictions: College of Business majors, junior standing or higher; departmental approval required.

FIN320 - Real Estate 320-3 Real Estate. Problems of real estate ownership, management, financing, and development. Restrictions: College of Business majors, junior standing or higher; or departmental approval required.

FIN322 - Real Estate Appraisal 322-3 Real Estate Appraisal. The techniques and art of real estate valuation using market comparison, cost, and income approaches. Includes appraisal principles, procedures, and applications. Restrictions: College of Business majors, junior standing or higher; or instructor or departmental approval required.

FIN330 - Introduction to Finance 330-3 Introduction to Finance. Study of issuance, distribution, and purchase of financial claims including the topics of financial management, financial markets, and financial investments. Prerequisites: ACCT 220, ACCT 230, ECON 240, ACCT/FIN/MGMT 208, MATH 139, and MATH 140. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

FIN331 - Investments 331-3 Investments. Survey of the problems and procedures of investment management; types of investment risks; investment problems of the individual as well as the corporation. Prerequisite: FIN 330 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

FIN341 - Financial Markets 341-3 Financial Markets. Operations of capital markets. Sources and uses of funds of financial institutions. Prerequisite: FIN 330 with a grade of C or better. Restricted to business major or minor, junior standing or consent of department.

FIN350 - Small Business Financing 350-3 Small Business Financing. Financing problems involved in raising venture capital, debt type funds, expansion funds, and government sponsored funding. Budgeting, working capital management, and fixed asset planning are covered. Prerequisites: ACCT 220, ACCT 230 and ECON 240. Restrictions: College of Business majors, junior standing or higher; or departmental approval required.

FIN361 - Mgmt of Business Finance 361-3 Management of Business Finance. The principal problems of managing the financial operations of an enterprise. Emphasis upon analysis and solutions of problems pertaining to policy decisions. Prerequisite: FIN 330 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

FIN380 - Business Law II 380-3 Business Law II. Legal problems arising from situations involving sales, commercial paper, secured transactions, suretyship, and bankruptcy. Restrictions: College of Business majors, junior standing or higher; or departmental approval required.

FIN432 - Options & Futures Markets 432-3 Options and Futures Markets. Study of modern concepts and issues in financial options and futures markets. Emphasis on risk management in financial institutions, and applications in corporate finance and funds management. Prerequisite: FIN 331 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

FIN433 - Portfolio Theory & Mgmt 433-3 Portfolio Theory and Management. Examination of modern concepts relating to management of security portfolios. Topics include security analysis, Markowitz Portfolio Theory, efficient market hypothesis, portfolio performance measurement, risk, and portfolio construction. Prerequisite: FIN 331 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

FIN434 - Risk Management 434-3 Risk Management. This course includes a survey and application of various risk management techniques with an emphasis on commodity risk management. Topics include: pricing theories of futures and options, examination of firm risk, and the use of a trading room to simulate risk management techniques. Prerequisite: FIN 432. Restrictions: College of Business majors, junior standing or higher; or departmental approval required.

FIN449 - Mgmt of Financial Institutions 449-3 Management of Financial Institutions. Principal policies and problems which confront top management. Emphasis on liquidity, loans, investments, deposits, capital funds, financial statements, organization structure, operations, personnel, cost analysis, and public relations. Not for graduate credit. Prerequisite: FIN 330 and FIN 341 with a grade of C or better in both courses. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

FIN462 - Working Capital Mgmt 462-3 Working Capital Management. Liquidity analysis and management with a focus on managing cash, marketable securities, accounts receivable, inventory, banking relationships and short-term financing. Students may choose to be associated with Corporate Treasury Management Program and may be eligible to pursue CTP certificate. Prerequisite: FIN 361 or concurrent enrollment. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

FIN463 - Forecast & Capital Budgeting 463-3 Forecasting and Capital Budgeting. Long-term forecasting techniques used in business; alternative approaches to capital structure decisions, cost of capital measurement; and performance measurement for investment decisions including mergers and leasing; explicit consideration of certainty, risk, and uncertainty in investment analysis; theory and applications in private and public sectors. Prerequisite: FIN 361 or concurrent enrollment. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

FIN464 - International Finance 464-3 International Financial Management. Examine decision-making in International Finance by studying issues encountered when investments and business operations cross national boundaries. Topics include foreign exchange markets, parity conditions, exchange rate exposure and hedging, global financing, multinational capital budgeting, working capital management and international portfolio diversification. Not available for students with credit for BA 582. Prerequisite: FIN 361 or concurrent enrollment. Restrictions: College of Business majors, junior standing or higher; or departmental approval required.

FIN469 - Security Valuation 469-3 Financial Analysis and Security Valuation. Study of the corporation's financial problems and their causes and solutions. Emphasis given to the impact of these financial problems on how the market values securities. Topics include liquidity and leverage analysis, analysis of profitability, and other financial analysis tools. Not available for students with credit for BA 536.

Prerequisite: FIN 361. Restrictions: College of Business majors, junior standing or higher; or departmental approval required.

FIN491 - Readings in Finance 491-1 to 6 Readings in Finance. Readings in classical and current writing on selected topics in various areas in the field of finance not available through regularly scheduled courses. Not for graduate credit. Consent of department chair required. Mandatory Pass/Fail. Restrictions: College of Business majors, junior standing or higher, and an outstanding record in Finance. Special approval needed from the department.

FIN495 - Internship in Finance 495-3 Internship in Finance. Designed to provide an opportunity to relate certain types of work experience to the student's academic program and objectives. Approved internship assignments with cooperating companies in the fields of finance are coordinated by a faculty member. Course may be repeated in a subsequent semester, but only three semester hours may be applied toward the Finance major. Additional credit hours may only satisfy the 300-400 level College of Business prefix elective or general elective requirements. Mandatory Pass/Fail. Not for graduate credit. Restrictions: Finance majors, junior standing or higher, and an outstanding record in Finance. Special approval needed from the department.

Finance Faculty

Beardsley, Xiaoxin Wang, Associate Professor and Interim Chair, Ph.D., Pennsylvania State University, 2003.

Davidson, Wallace N., III, Professor, Emeritus, Ph.D., Ohio State University, 1982.

Deng, Saiying, Associate Professor, Ph.D., Temple University, 2005.

Elsaid, Hussein H., Professor, Emeritus, Ph.D., University of Illinois, 1968.

Liang, Claire, Assistant Professor, Ph.D., University of Alberta, 2014.

Marlo, Timothy M., Clinical Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2016.

Mathur, Iqbal, Professor, Emeritus, Ph.D., University of Cincinnati, 1974.

Peterson, Mark A., Professor and Associate Dean, Ph.D., Pennsylvania State University, 1996.

Waters, Gola E., Professor, Emeritus, J.D., University of Iowa, 1957, Ph.D., Southern Illinois University, 1970.

Forestry

Five specializations are offered within the major in forestry: Forest Resources Management, Forest Hydrology, Urban Forest Management, Forest Recreation and Park Management, and Wildlife Habitat Management and Conservation. University Core Curriculum requirements and a core of professional courses are similar for each specialization. Students majoring in the Department of Forestry may not take courses specifically required in the various specializations for pass/fail credit. The specializations are accredited by the Society of American Foresters, 5400 Grosvenor Lane, Bethesda, MD, 20814, (301) 897-8720.

Available to the Department of Forestry for teaching and research in addition to resources present on campus are the following: the Crab Orchard National Wildlife refuge; the Shawnee National Forest; a number of state parks and state forests; conservation areas and federal reservoirs. Collectively, these public lands and waters offer considerable and diverse outdoor educational and recreational opportunities, all in the vicinity of the University.

The curricula of the Department of Forestry prepare graduates for employment with local, state and federal natural resource agencies, as well as private industry. In addition, many graduates continue their education in advanced masters and doctoral programs. Federal agencies employing our graduates include the Forest Service, Natural Resources Conservation Service, Fish and Wildlife Service, National Park Service, Bureau of Reclamation, Bureau of Land Management, Environmental Protection Agency, Tennessee Valley Authority, and the Army Corps of Engineers. There are also employment opportunities in state government with agencies such as fish and game commissions, departments of natural resources and conservation, and forest services. At the local level, there are opportunities with urban forest and

park systems. Private agencies have included Ducks Unlimited, the Nature Conservancy, the National Audubon Society and the American Forestry Association. Forestry graduates often are employed by private forestry consulting firms and by private industries such as Weyerhaeuser Co., International Paper Co., Georgia Pacific Corporation, and New Page Corporation.

Bachelor of Science Degree in Forestry, College of Agricultural Sciences

Forestry Major - Forest Hydrology Specialization

The program in Forest Hydrology helps students develop knowledge and skills in integrated natural resource management in a watershed context with an emphasis on freshwater and forest resources. The goal of the Forest Hydrology specialization is to prepare individuals for water-related careers in federal and state government agencies, municipal/county watershed management, and environmental/engineering consulting firms. This specialization also prepares students for graduate study in natural resource management and hydrology. The specialization includes areas of study recommended and accredited by the Society of American Foresters and includes the course work necessary to qualify as a hydrologist in a federal agency. Students in the specialization are required to participate in either the four week forest resource management or forest recreation and park management summer field camp to gain practical field experience. Costs per student for off-campus living expenses and transportation for summer field-studies are not to exceed \$750 and must be borne by the student. Other costs for equipment and supplies, which are required for field study and certain other courses, are specified in course descriptions.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Major in Forestry with Forest Hydrology Specialization	79-82
Forestry Core: FOR 100, FOR 201, FOR 202, FOR 285, FOR 310, FOR 314, FOR 325, FOR 331, FOR 351, FOR 381, FOR 411, FOR 430	34
CHEM 140A, Science Requirement: (one of the following) ZOOL 118, PLB 200, or BIOL 213	8
ABE 204 or ECON 240 ¹	(3)
ENGL 290 or ENGL 291, MATH 108 or 109 or 140 (12)1+3 or 4 =15 or 16	
Summer Field Studies: FOR 422C or FOR 310C, FOR 314C, FOR 351C, FOR 360C (summer camp)	6
FOR 402, FOR 421 FOR 429, FOR 452L, (FOR 416 or FOR 420)	13-14
G.I.S. Course: FOR 308 or GEOG 401	3
Soils Course: CSEM 240 or FOR 352	3-4

Degree Requirements	Credit Hours
Forestry Electives (Course Selection): ABE 318, FOR 210, FOR 220, FOR 230, FOR 315, FOR 350, FOR 352, FOR 375, FOR 390, FOR 403, FOR 405, FOR 409, FOR 415, FOR 416, FOR 420, FOR 428, FOR 431, FOR 451, FOR 452L, FOR 454, FOR 460, FOR 470, FOR 480, ERP 330, ERP 401, ERP 431, ERP 433, ERP 434, ERP 471, GEOL 327I, GEOL 470, GEOL 471, GEOL 474, MATH 150, MATH 282, PHYS 203A, PHYS 203B, PLB 445, ZOOL 410, ZOOL 411, ZOOL 414, ZOOL 415, ZOOL 458, ZOOL 466, ZOOL 468 ²	18
Total	120-123

1 Hours included in total for University Core Curriculum requirements.

2 **In order to qualify for employment as a federal hydrologist students must complete 6 credit hours of calculus and physics. FOR 415, FOR 416, FOR 420 and GEOL 327I courses may not be used to satisfy more than one requirement.

Bachelor of Science Degree in Forestry, College of Agricultural Sciences

Forestry Major - Forest Resources Management Specialization

The program in Forest Resources Management includes instruction leading to careers in forest management and production, forest ecosystem management, and the forest products industries. The goal of the Forest Resources Management specialization is to develop individuals with sufficient understanding of the physical, biological and economic considerations required to make sound management decisions for forest sustainability. The specialization includes areas of study recommended and accredited by the Society of American Foresters. Emphasis is upon integrated resource management of natural and renewable resources, coordinating forest utilization methods and conservation practices, and sustaining our wild lands heritage. Students in the specialization are required to participate in the four week forest resource management summer field camp (FOR 310C, FOR 314C, FOR 351C, FOR 360C) to gain practical field experience. Costs per student for off-campus living expenses and transportation for summer field-studies are not to exceed \$750 and must be borne by the student. Other costs for equipment and supplies, which are required for field study and certain other courses, are specified in course descriptions.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Management Specialization	79-80
Forestry Core: FOR 100, FOR 201, FOR 202, FOR 285, FOR 310, FOR 314, FOR 325, FOR 331, FOR 351, FOR 381, FOR 411, FOR 430	34
CHEM 140A, Science Requirement:(one of the following) ZOOL 118, ZOOL 200B, PLB 200 ¹	(8)

Degree Requirements	Credit Hours
ABE 204 or ECON 240 ²	(3)
ENGL 101, ENGL 102, (ENGL 290 or ENGL 291), CMST 101, MATH 106 or MATH 108 or MATH 125 ³	(12) +3 = 15
Summer Field Studies: FOR 310C, FOR 314C, FOR 351C, FOR 360C	6
FOR 315, FOR 416	7
GIS Course: FOR 308 or GEOG 401	3
Soils Course: FOR 352 or CSEM 240	3-4
Forestry Electives (Course Selection): ABE 318, FOR 210, FOR 220, FOR 230, FOR 350, FOR 352, FOR 375, FOR 390, FOR 402, FOR 403, FOR 405, FOR 409, FOR 415, FOR 418, FOR 420, FOR 428, FOR 429, FOR 431, FOR 451, FOR 452L, FOR 460, FOR 470, FOR 480, BIOL 307, ERP 401, ERP 471, HORT 420, MATH 282, ZOOL 118, ZOOL 410, ZOOL 468, ZOOL 469 ⁴	23-24
Total	121

1 Hours included in total for University Core Curriculum requirements.

2 Hours included in total for University Core Curriculum requirements.

3 Hours included in total for University Core Curriculum requirements

4 Minimum hours required to bring total hours to 120. FOR 352, FOR 415 and ERP 401 courses may not be used for more than one requirement.

Forestry Major - Forest Recreation and Park Management Specialization

The program in Forest Recreation and Park Management provides interdisciplinary training for management of the nation's outdoor recreation heritage. The National Recreation and Park Association and the Society of American Foresters are among those organizations recommending the courses offered. The goal of the Forest Recreation and Park Management option is to prepare students for entry into professional careers in planning, managing, and administering public lands for outdoor recreation operated by a variety of agencies in diverse geographic and natural settings. The Forest Recreation and Park Management student travels through selected sections of the United States on a park and recreation field studies session to outdoor recreation and protected area facilities. The forest recreation summer camp requires the student pay transportation and living expenses not to exceed \$750 and must be borne by the student. Other costs for equipment and supplies, which are required for field study and certain other courses, are specified in course description.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39

Degree Requirements	Credit Hours
Requirements for Major in Forestry with Forest Recreation and Park Management Specialization	81
Forestry Core: FOR 100, FOR 201, FOR 202, FOR 285, FOR 310, FOR 314, FOR 325, FOR 331, FOR 351, FOR 381, FOR 411, FOR 430	34
CHEM 140A, Science Requirement: (one of the following) ZOO 118, PLB 200 ¹	(8)
ABE 204 or ECON 240	(3)
ENGL 101, ENGL 102, (ENGL 290 or ENGL 291), CMST 101, MATH 106 or MATH 108 or MATH 125	(12)+3
Soils Course: FOR 352 or CSEM 240	7-8
Summer Field Studies: FOR 422C (summer camp)	6
FOR 220, FOR 420, FOR 421, FOR 423	11
G.I.S. Course: FOR 308 or GEOG 401	3
Forestry Electives: ABE 318, ANTH 430A, ANTH 450B, BIOL 307, FOR 210, FOR 230, FOR 308, FOR 315, FOR 350, FOR 352, FOR 375, FOR 390, FOR 401, FOR 402, FOR 403, FOR 405, FOR 409, FOR 415, FOR 416, FOR 428, FOR 429, FOR 430, FOR 431, FOR 451, FOR 452L, FOR 470, FOR 480, ERP 401, ERP 471, MATH 282, MGMT 304, MGMT 350, PSYV 307, REC 300, REC 303, REC 375, SOC 386, CMST 412, ZOO 410, ZOO 411, ZOO 468, ZOO 469 ²	15-16
Total	120-121

1 Hours included in total for University Core Curriculum requirements.

2 Minimum hours required to bring total to 120. FOR 352 and ERP 401 courses may not be used to satisfy more than one requirement.

Bachelor of Science Degree in Forestry, College of Agricultural Sciences

Forestry Major - Urban Forest Management Specialization

The program in Urban Forest Management provides students with interdisciplinary training in the management of forest resources in urban areas and other settings where aesthetics and enhancing environmental values of communities are of primary concern. The specialization includes areas of study recommended and accredited by the Society of American Foresters with additional course work providing a background in arboriculture, landscape management and design, small business management, and municipal government. Students are especially prepared for entry into careers in the green industry and municipal forest management and administration. Students in the specialization are required to

participate in either the four week forest resource management (FOR 310C, FOR 314C, FOR 351C, FOR 360C) or forest recreation and park management (FOR 422C) summer field camp to gain practical field experience. Field study costs per student for off-campus living expenses and transportation are not to exceed \$750 per student and must be borne by the student. Other costs for equipment and supplies, which are required for field study and certain other courses, are specified in course descriptions.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Major in Forestry with Urban Forest Management Specialization	79-81
Forestry Core: FOR 100, FOR 201, FOR 202, FOR 285, FOR 310, FOR 314, FOR 325, FOR 331, FOR 351, FOR 381, FOR 411, FOR 430	34
CHEM 140A, Science Requirement: (one of the following) ZOO 118, PLB 200 ¹	(8)
ABE 204 or ECON 240	(3)
ENGL 101, ENGL 102, CMST 101, MATH 106 or MATH 108 or MATH 125	(12)
ENGL 290 or ENGL 291	3
G.I.S. Course FOR 308 or GEOG 401	3-4
Summer Field Studies: FOR 310C, FOR 314C, FOR 351C, FOR 360C or (resource camp) or FOR 422C (summer camp)	6
FOR 416 or FOR 421, FOR 428	6-7
Soils Course: FOR 352 or CSESM 240	10
Forestry Electives: ABE 318, FOR 210, FOR 220, FOR 230, FOR 308, FOR 315, FOR 403, FOR 414, FOR 420, FOR 423, FOR 430, FOR 451, FOR 452L, FOR 480, GEOG 401, MGMT 350, MATH 282, POLS 213 ²	17-18
Total	120

1 Hours included in total for University Core Curriculum requirements.

2 Minimum hours required to bring total to 120. FOR 308 and GEOG 401 courses may not be used to satisfy more than one requirement.

Bachelor of Science Degree in Forestry, College of Agricultural Sciences

Forestry Major - Wildlife Habitat Management and Conservation Specialization

The program in Wildlife Habitat Management and Conservation helps students develop knowledge and skills in integrated natural resource management with an emphasis on habitat management for wildlife. The goal of this specialization is to train individuals for wildlife and forestry-related careers in federal and state governmental agencies, non-governmental conservation organizations, and natural resource consulting firms. Students will also be well-prepared for entry into the profession of conservation police officer. In addition, this specialization readies students for graduate study in forestry and wildlife management. This specialization includes areas of study recommended and accredited by the Society of American Foresters. Students in the specialization are required to participate in either the forest resources management (FOR 310C, FOR 314C, FOR 351C and FOR 360C) or forest recreation and park management (FOR 422C) summer field camp to gain practical field experience. Summer camp fees for off-campus living expenses and transportation are not to exceed \$750 per student and must be borne by the student. Other costs for equipment and supplies, which are required for field study and certain other courses, are specified in course descriptions.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Forestry Major with Wildlife Habitat Management and Conservation Specialization (WHMS)	81
Forestry Core: FOR 100, FOR 201, FOR 202, FOR 285, FOR 310, FOR 314, FOR 325, FOR 331, FOR 351, FOR 381, FOR 411, FOR 430	34
CHEM 140A; PLB 200 or ZOOL 118	(8)
ABE 204 or ECON 240 ¹	(3)
MATH 108, ENGL 290 or ENGL 291	(3)+3=6
Summer Field Studies: FOR 310C, FOR 314C, FOR 351C, FOR 360C or FOR 422C	6
FOR 315, FOR 403 or FOR 431, FOR 405, FOR 416, FOR 451	16
Forestry Electives: BIOL 307, FOR 210, FOR 220, FOR 230, FOR 308, FOR 315, FOR 352, FOR 375, FOR 390, FOR 402, FOR 403, FOR 409, FOR 415, FOR 418, FOR 420, FOR 421, FOR 428, FOR 429, FOR 431, FOR 452L, FOR 461, FOR 467, FOR 470, FOR 480, GEOL 471, PLB 300, ZOOL 410 ²	6-7
G.I.S. Course: FOR 308 or GEOG 401	3
Soils Course: FOR 352 or CSEM 240	3-4

Degree Requirements	Credit Hours
AGBE 318 or MATH 282	11-12
Total	120-121

1 Hours included in total for University Core Curriculum requirements.

2 Minimum hours required to bring total to 120.

Forestry Courses

FOR100 - Introduction to Forestry 100-1 Introduction to Forestry. Students experience varied subject areas of Forestry including forest recreation, ecology, silviculture, wildlife habitat restoration, hydrology, wildland fire, forest products, natural ecosystems and conservation. Special emphasis is given to the diversity of careers in Forestry. Required field trip transportation fee not to exceed \$50 per course registration.

FOR102 - Tree ID Primer 102-3 Tree Identification Primer. A one-semester course that teaches fundamental identification techniques of trees, vines, and shrubs using leaves, twigs, bark, and fruit characteristics. Students will learn basic principles in plant taxonomy and botany, and develop problem solving techniques to help in plant identification processes. The course serves as an introductory plant identification course and as a primer for FOR 202-Tree Identification Laboratory.

FOR125 - Forestry & Nat Res Conservatn 125-3 Forestry and Natural Resource Conservation. (University Core Curriculum) Introduction to the field of forestry and natural resource conservation. Special emphasis will be placed on the key fields of study including ecosystem science, wildlife habitat relationships, forest recreation, and urban forestry. The following course related performance goals would be expected from you at the conclusion of the course: 1. Describe the forest regions of the world, 2. Describe the key concepts wildlife habitat relationships, 3. Describe the primary types of ecosystem services in natural areas, 4. Describe the factors that affect participation in forest recreation, 5. Understand commonly used natural resource data, 6. Describe commonly used forest practices, 7. Describe the key concepts urban forests, and 8. Describe common careers in the forest management profession.

FOR201 - Ecology: N American Forests 201-3 Ecology of North American Forests. This course introduces concepts of biology, physiology, ecology, and silvics important to the growth, development, and sustainability of trees and forest ecosystems. Emphasis includes understanding how trees are influenced by: the physical environment (atmosphere, light, water, topography, fire, soils, etc.); the biological, physiological, and genetic potential of tree species; and interrelationships with other organisms including wildlife, fungi, and humans. Requires field trip transportation fee not to exceed \$20 per course registration.

FOR202 - Tree Identification Lab 202-3 Tree Identification Laboratory. Field and Laboratory identification of native and exotic trees, shrubs and woody vines using leaf, twig, bark and fruit characteristics. Requires field trip transportation fee not to exceed \$50 per course registration.

FOR210 - Freshwater Angling 210-3 Freshwater Angling and Aquatic Resource Management. This course will provide an introduction to angling in Illinois ponds, lakes, and streams/rivers. Emphasis will focus on angling techniques, equipment, and habitat requirements necessary for freshwater game species in Illinois' waters. Threats and challenges toward the future of angling will also be discussed highlighting emerging diseases, fishing pressure, resource competition, aquatic weed control, and water quality. The course is offered online only.

FOR215 - Bass Fishing Techniques 215-3 Bass Fishing Techniques. This course will provide an introduction to bass fishing in Illinois ponds, lakes, and streams/rivers. Emphasis will focus on angling techniques, equipment, and habitat requirements necessary for recreational angling and tournament fishing across the U.S. Threats and challenges toward the future of Bass Fishing will also be discussed

highlighting fishing pressure, resource competition, aquatic weed control, and water quality. This course is online and face-to-face course that will meet 1 day per week.

FOR220 - Intro to Forest Recreation 220-2 Introduction to Forest Recreation. Trends in outdoor recreational use of wild lands and natural areas with emphasis on state and federal parks and forests. Introductory concepts in recreation resources management, visitor impact assessment and environmental interpretation.

FOR230 - Intro to Water Resources 230-3 Introduction to Water Resources. Introduction to the distribution, management, and quality of water resources. Emphasis on the hydrologic cycle, the watershed as a unit of management, water supply and treatment, and the functions of aquatic ecosystems including rivers, streams, aquifers, lakes, ponds, and wetlands.

FOR285 - Social Influences Forestry 285-3 Social Influences on Forestry. Study of the human dimensions of natural resource management. Exploration of the ethical and historical negotiations of the human-nature relationship. Examination of the role of public opinion in conservation and sustainable resource decision making. Exposure to environmental justice, political ecology, ecological economics, and the influences of media, science and technology.

FOR308 - Mapping and GIS 308-3 Introduction to Mapping and Geographic Information Systems. Integrated use of mapping, aerial photographs, and field information to evaluate resources in the development of land management plans. Topics range from aerial photo interpretations, to GIS database management and vegetation mapping. Course will include classroom presentations, field trips and lab exercises. Requires field trip and supplemental expenditures not to exceed \$50 per course registration.

FOR310 - Practices of Silviculture 310-4 Practices of Silviculture. Detailed study of classical concepts and recently developed techniques utilized in silviculture treatment of forests. Major emphasis to be placed upon establishment, thinning, timber stand improvement, and regeneration of forests. Prerequisite: FOR 331. Requires field trip and supplemental expenditures not to exceed \$40 per course registration.

FOR310C - Silviculture Field Studies 310C-1 Silviculture Field Studies. Methods of determining volume and quality of forest products, forest resource inventory procedures, growth, and productivity studies. Co-requisites: FOR 314C, FOR 351C, and FOR 360C. Prerequisite: FOR 310, FOR 331 or consent of instructor. Requires field trip transportation fees and supplemental expenditures not to exceed \$125 per course registration. Summer camp fees and costs are outlined in the Forestry major-Forest Resources Management Specialization.

FOR311 - Resources Photogrammetry 311-3 Resources Photogrammetry. The science and art of obtaining reliable measurement by means of photographs, detection of disease, insects, and fire invasion by remote sensors; and delineation of resources boundaries through interpretation.

FOR313 - Harvesting Forest Crops 313-3 Harvesting Forest Crops. Emphasis is given to lumber sale layouts, sale contracts, and harvest engineering methods. Consideration is given to the environmental impacts of harvesting. Prerequisite: FOR 310 or consent of instructor. Requires field trip transportation fee not to exceed \$25 per course registration.

FOR314 - Forest Health 314-3 Forest Health. Detailed study of the factors that influence forest health, including abiotic stress, diseases, insects, and invasive plants. Special emphasis will be placed on the identifications of the signs and symptoms of the factors that affect forest health and the appropriate management techniques to mitigate these factors.

FOR314C - Forest Protection Field Studies 314C-2 Forest Protection Field Studies. The prevention and suppression of forest fires, the recognition and control of insect and disease organisms and other destructive agents in the forest. Co-requisites: FOR 310C, FOR 351C, and FOR 360C. Prerequisites: FOR 314, FOR 315, and FOR 331 or consent of instructor. Requires field trip transportation fees and supplemental expenditures not to exceed \$250 per course registration. Summer camp fees and costs are outlined in the Forestry major-Forest Resources Management Specialization.

FOR315 - Fire in Wildland Mgmt 315-3 Fire in Wildland Management. Fire as a phenomenon in wildland management. Topics covered are fire prevention, detection, suppression, behavior, effects, use and

economics. Major emphasis is on fire control and fire ecology. Requires field trip transportation fees and supplemental expenditures not to exceed \$75 per course registration.

FOR320C - Forest Wildlnd Rec Field Study 320C-1 Forest and Wildlands Recreation Field Studies. Recreation of forest and adjacent lands with emphasis on parks and national forests. Administration; interpretation; trends in use and development. Offered at summer camp only. Prerequisite: FOR 220. May require supplemental expenditures not to exceed \$35 per course registration. Summer camp transportation fees and cost are outlined in the Forestry Major description - Forest Resources Management Specialization.

FOR325 - Forest Policy 325-3 Forest Resource Policy and Administration. Policy formation and implementation, including the roles of special interest groups and public values. Examination of federal natural resource policies, conservation leaders who influenced policy and current applications of policy in forest management.

FOR331 - Forest Ecosystems 331-3 Forest Ecosystems. Forest Ecosystems covers topics including community concepts; competition; tolerance; disturbance; succession; carbon balance; diversity; and the ecological and social aspects of ecosystem management relating to the structure, energy flow, and dynamic interrelationships of the biotic and abiotic forest environment to understand and sustainably manage forest ecosystems and habitat over time. Prerequisite: FOR 201 or consent of instructor.

FOR341 - Forestry Practices 341-3 Forestry Practices. The fundamentals of integrated resource management of timberlands. Management systems, tree stand measurements. Planting and harvesting methods, multiple-use aspects of forest lands. Field trips. Emphasis on small forest ownerships. Not for graduation credit in forest resources management.

FOR350 - Wood as a Raw Material 350-3 Wood as a Raw Material. Structure, identification, and properties of wood. Important species, significance of properties to end-use and significance of wood to the environment.

FOR351 - Forest Measurements 351-4 Forest Measurements. Introductory measurement, statistical and data processing concepts; volume, growth, and yield of forest products; methods of sampling forest resources. Requires field trip transportation fees and supplemental expenditures not to exceed \$75 per course registration.

FOR351C - Measurements Field Study 351C-2 Forest Resources Measurements Field Studies. Methods of determining volume and quality of forest products, forest resource inventory procedures, growth, and productivity studies. Co-requisites: FOR 310C, FOR 314C, and FOR 360C. Prerequisite: FOR 351 or consent of instructor. Requires field trip transportation fees and supplemental expenditures not to exceed \$250 per course registration. Summer camp fees and costs are outlined in the Forestry major - Forest Resources Management Specialization.

FOR352 - Intro to Forest Soils 352-3 Introduction to Forest Soils. An introduction to the characterization and fundamental concepts of forest soils and their relationships to forest communities and forest management practices. Emphasis is on the essential chemical, biological, and physical properties of forest soils as related to forests and forest management. This course will provide a sound basis for learning basic soils concepts specifically related to forest ecosystems which are beneficial to Forestry majors and those majoring/minoring in Soil Science or related natural science disciplines.

FOR360C - Forest Industries Fld Studies 360C-1 Forest Industries Field Studies. A study of primary and secondary forest product processing in the central hardwood region. Co-requisites: FOR 310C, FOR 314C, and FOR 351C. Requires field trip transportation fees and supplemental expenditures not to exceed \$125 per course registration. Summer camp fees and costs are outlined in the Forest major - Forest Resources Management Specialization.

FOR375 - Wildlife/NR Enterprise Mgmt 375-3 Wildlife and Natural Resource Enterprise Management. Introduction to the field of wildlife and natural resource enterprise management in North America. Special emphasis will be placed on hunting as a source of generating revenue through leases, habitat consulting, and outfitting. The course will also offer an opportunity to explore outdoor recreation based tourism and recreational real estate.

FOR381 - Forestry Seminar 381-1 Forestry Seminar. Presentation of topics pertinent to multiple-use management and utilization of forest resources. Restricted to senior standing.

FOR390 - Forestry Internship 390-1 to 3 Forestry Internship-Opportunities for Excellence. Forestry Internships (paid or non-paid) are supervised learning experiences which are integrated into the students' academic program and are conducted in a pre-approved setting with a local, state or federal agency, a non-profit organization, SIU Touch of Nature, or public/private business. Student must secure the internship and submit job site contact info and a list of personal goals and learning objectives for approval by a member of the forestry faculty who will serve as their internship advisor. A reflective paper on the internship experience and a written evaluation submitted by intern's on-site supervisor are required at the end of the semester. Repeatable; maximum of 3 hours toward degree (Forestry Elective credit). Prerequisite: minimum GPA of 2.50 and special approval needed.

FOR391 - Special Problems:For Resources 391-1 to 4 Special Problems in Forest Resources. Independent research sufficiently important to require three hours per week of productive work for each hour of credit. Restricted to junior standing. Special approval needed from the chairperson.

FOR401 - Fundmntls Environmental Educ 401-3 Fundamentals of Environmental Education. (Same as AGRI 401 and REC 401) A survey course designed to help education majors develop an understanding of environmental education principles and teaching both inside and outside the classroom. Prerequisite: ten hours of biological science or ten hours of recreation and/or education, or consent of instructor. Requires field trip transportation fee not to exceed \$25 per course registration.

FOR402 - Wildland Hydrology 402-3 Wildland Hydrology. Fundamentals of hydrology as related to forest and wildland water resources will be emphasized. Considerations will include the hydrologic cycle with emphasis on soil and groundwater regimes, evapotranspiration, surface and subsurface runoff, and the quantity and timing of water yield. Offered spring semester even years.

FOR403 - Agroforestry 403-3 Agroforestry. This course examines the deliberate integration of forestry and related land management practices within agricultural landscapes, primarily addressing wildlife habitat, water quality, crop yield, and animal production enhancement and sustainability. Emphasis is placed on systems successfully implemented in North America, particularly the Midwest, but international examples will also be discussed. Prerequisite: FOR 201 or coursework in forest ecology or consent of instructor.

FOR405 - Forest Wildlife 405-3 Forest Management for Wildlife. This course is designed to familiarize students with a scientific understanding of the theory and practice of forest management for wildlife. Students will gain knowledge of basic forestry management principles as they apply to wildlife; ecology and management of different types of forests for wildlife; and habitat requirements of forest birds, mammals, and herps and applicable forest management techniques. Restricted to Forestry, Zoology, Bio Science, Animal Science, or Environmental Science majors/minors; sophomore or higher, or with consent of instructor.

FOR406 - Landscape Ecology 406-2 Landscape Ecology. (Same as FOR 506) (FOR 506-3, will have an additional lab requirement) Principles of landscape ecology in the context of forested systems. There is an emphasis on how spatial heterogeneity and human activities influence landscape patterns. Prerequisite: G.I.S. course or consent of instructor.

FOR409 - International Forestry 409-3 International Forest Resources Decision-Making. Examines management planning decision-making for multiple-use forests around the world. Reviews concepts useful for analyzing flow-resource problems, emphasizing systems approaches, introduces use of modern quantitative and qualitative methods to evaluate resource use alternatives. Case studies from around the world. Prerequisite: FOR 411.

FOR411 - Forest Resources Economics 411-3 Forest Resources Economics. Application of micro- and macro-economic principles to forest timber and non-timber production; capital theory, benefit-cost analysis; and economics of conservation. Prerequisite or Co-requisite: ECON 240 or ABE 204.

FOR412 - Tree Improvement 412-2 Tree Improvement. Basic theories and techniques of obtaining genetically superior trees for forest regeneration. Restricted to senior standing.

FOR413 - Summer Forest Wildlife 413-2 Summer Ecology of Forest Wildlife. This course is designed to familiarize students with a scientific understanding of the ecology and management of forest wildlife species during the summer months. In this intensive, one-week summer course, students will engage in laboratory, lecture, and field modules intended to inform students about forest wildlife communities and common research and management methods. Students will gain considerable hands-on experience conducting field- and laboratory-based methods useful for studying and managing forest wildlife and their habitat.

FOR414 - Information Management 414-3 Information Management. The collection of physical, biological, and social variables in the field of forestry through sampling survey. The procedures of data manipulation and calculation and the presentation of graphs and tables.

FOR415 - Prescribed Burn Planning 415-2 Prescribed Burn Planning. FOR 415 provides a practical overview of planning, mapping, and execution of prescribed burns for ecological restoration efforts in woodland and prairie habitats or other wildland areas. Emphasis will be placed on writing burn prescriptions, laying out burn units, planning and executing burns, and long term monitoring efforts. This will be accomplished with weekly on-line reading assignments followed by Friday morning field trips to visit burn units, prepare control lines, record weather observations, and conduct fuel model assessments. Requires field trip transportation fees and supplemental course expenditures not to exceed \$45 per course registration. Offered during spring semesters. Prerequisite: FOR 315-Fire in Wildland Management. Consent of instructor.

FOR416 - Forest Resource Management 416-4 Forest Resource Management. The application of business procedures and technical forestry principles to manage forest properties. Emphasis on integrated resource management for tangible and intangible benefits. Prerequisite: FOR 351, completion of Forest Resource summer camp series or consent of instructor. Requires field trip transportation fee and supplemental expenditures not to exceed \$40 per course registration.

FOR417 - Forest Land-Use Planning 417-2 Forest Land-Use Planning. Principles of location theory as a basis for determining land use; supply of forest land; population pressure and demand; conservation principles; determination of forest land values; institutional factors influencing forest land-use; forest taxation; special taxes, and capital gains. Taught in alternate years. Prerequisite: FOR 411 or consent of instructor.

FOR418 - Marketing of Forest Products 418-2 Marketing of Forest Products. The role of marketing in the forest industries; review of economic principles; product policy, planning the product line, pricing, marketing channels, marketing programs, marketing organization, and marketing research as influences on the marketing of lumber, wood products, pulp, and paper. Taught in alternate years. Prerequisite: FOR 411 or consent of instructor.

FOR420 - Park Management 420-3 Park and Wildlands Management. The management of state and federal parks and recreation areas. A systems approach toward management and decision-making will be emphasized. Requires field trip transportation fees and supplemental expenditures not to exceed \$50 per course registration.

FOR421 - Recreation Land-Use Planning 421-3 Recreation Land-Use Planning. Principles and methods for land-use planning of park and recreation environments with emphasis on human dimensions of natural resource research. Focus on planning process and types of information to gather and organize. Application in group field projects. Prerequisite: FOR 220, 420, or consent of instructor. Requires field trip transportation fee not to exceed \$25 per course registration.

FOR422C - Forest Recreation Camp 422C-6 Park and Wildlands Management Camp. A study of park conditions, visitors, and management practices at selected county, state, and federal park systems in the U.S., including the federal wilderness preservation system. Prerequisite: FOR 220 or consent of instructor. Requires field trip transportation fees and supplemental expenditures not to exceed \$750 per course registration. Summer camp fees and costs are outlined in the Forestry major - Forest Recreation and Park Management Specialization.

FOR423 - Environmental Interpretation 423-3 Environmental Interpretation. (Same as AGRI 423 and REC 423) Principles and techniques of natural and cultural interpretation. Two hours lecture, three

hours laboratory. Prerequisite: ten hours biological science or ten hours of recreation. Requires field trip transportation fee not to exceed \$40 per course registration.

FOR425 - Habitat Mgmt Wild Game 425-3 Habitat Management for Wild Game. Introduction to the field of habitat management for wild game species in the Central Hardwood Forest Region of North America. Special emphasis will be placed on providing and manipulating the essential habitat requirements for trophy game including deer, turkey, and upland birds. A holistic approach to habitat management will be emphasized to identify how management of wild game habitat can satisfy other landowner goals and objectives. Restricted to junior level standing or above or permission of instructor.

FOR428 - Urban Forestry 428-2 Urban Forestry. An introduction to principles and practices useful in the management of trees and forests in populated settings. Emphasis is placed on the development of comprehensive management strategies consistent with the biological, physical, economic and social constraints of the urban environment. Restricted to junior or senior standing or permission of the instructor.

FOR429 - Watershed Mgmt Field Lab 429-2 Watershed Management Field Laboratory. A field intensive laboratory course focused on hydrological and biological methods used to manage watersheds and assess watershed health. Laboratory topics include stream gauging, soil water and ground water sampling, channel morphology, stream benthos measurements, and water quality analysis of stream and lake ecosystems. Requires field trip transportation fee not to exceed \$30 per course registration.

FOR430 - Wildland Watershed Mgmt 430-3 Wildland Watershed Management. Emphasis is placed on the principles, technical problems, procedures, alternatives, and consequences encountered in managing wildland watersheds for the production of quality water in harmony with other uses.

FOR431 - Regional Silviculture 431-3 Regional Silviculture. This course examines prevailing management practices within each of the major forested regions of the United States. The course is primarily intended for students interested in wildlife habitat, wood production, or restoration. Emphasis is placed on understanding how underlying soils, silvics, climate, biotic agents, social forces, and past uses drive forestry differentially across the country. Prerequisite/Co-Requisite: FOR 310, or consent of instructor.

FOR451 - Wildlife Habitat & Populations 451-3 Wildlife Habitat and Populations. This course is designed to familiarize students with a scientific understanding of major topics in wildlife ecology and management, with a special focus on Forestry majors and natural resource inventory techniques. Students will gain knowledge of the history of the field of wildlife management, primary wildlife management principles and practices, ecological theory pertinent to wildlife populations and habitats, and current important issues/problems regarding wildlife management and natural resource inventory. Restricted to Forestry, Zoology, Biological Science, Animal Science majors/minors or Environmental Science minors; or by consent of instructor.

FOR452 - Forest Soils 452-3 Forest Soils. Forest Soils is designed to give the student a more comprehensive in-depth study of the patterns and processes of soil formation and their relation to forest productivity. Upon completion of the course, student will be familiar with soil/plant interactions, water relationships, and forest soil management for sustainable productivity and environmental quality. This course provides a sound basis for learning basic soils concepts specifically related to forest ecosystems which are beneficial to Forestry majors and those majoring/minoring in Soil Science or related natural science disciplines. Prerequisite: FOR 352 or consent of instructor. Requires field trip transportation fee not to exceed \$25 per course registration.

FOR452L - Forest Soils Laboratory 452L-2 Forest Soils Laboratory. Companion laboratory for FOR 452. Emphasis is on methods to characterize and evaluate the chemical, physical, and biological properties of forest soils. Requires field trip transportation fee not to exceed \$25 per course registration. Offered spring semester, even years.

FOR453 - Environment Impact Assessment 453-2 Environmental Impact Assessment in Forestry. Methods of assessing the environmental impact of land-use systems on forest resources and assessing the impact of forest management systems on environmental quality are presented. Case studies culminating in the preparation of environmental impact statements are emphasized. Restricted to senior

standing in a natural resource major. Requires field trip transportation fee not to exceed \$25 per course registration.

FOR454A - Forest Ecology: Boreal 454A-2 Forest Ecology Field Studies-Boreal. A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth two semester credits; a maximum of 6 credits may be applied toward graduate credit. Restricted to senior standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Requires field trip transportation fee not to exceed \$300 per course registration.

FOR454B - For Ecology: Lake States 454B-2 Forest Ecology Field Studies-Lake States. A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth two semester credits; a maximum of 6 credits may be applied toward graduate credit. Restricted to senior standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Requires field trip transportation fee not to exceed \$300 per course registration.

FOR454C - For Ecology: S Appalachians 454C-2 to 8 Forest Ecology Field Studies-Southern Appalachians. A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth two semester credits; a maximum of 6 credits may be applied toward graduate credit. Restricted to senior standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Requires field trip transportation fee not to exceed \$300 per course registration.

FOR454D - For Ecology: Southern Pine 454D-2 to 8 Forest Ecology Field Studies-Southern Pine. A study of forest communities, soils, and site conditions. Course requires a field trip of about 10 days. Each trip is worth two semester credits; a maximum of 6 credits may be applied toward graduate credit. Restricted to senior standing in natural resources or biological sciences, courses in tree identification, forest ecology, and soils. Special approval needed from the instructor. Requires field trip transportation fee not to exceed \$300 per course registration.

FOR460 - Forest Industries 460-2 Forest Industries. Analysis of raw material requirements, the processes and the products of forest industries. The environmental impact of each forest industry will also be discussed.

FOR470 - Wilderness Management 470-2 Wilderness Management, Policy, and Ethics. Study of current management philosophy and practice in America's wilderness. Analysis of current wilderness policy and its historical evolution. Discussion of the evolution of the wilderness idea and the individuals that have influenced it. Weekend field trip required. Offered alternate (even) years. Restricted to senior standing. Required field trip transportation and materials fee not to exceed \$80 per course registration.

FOR471 - Interdsp Apprs to Env Issues 471-3 Interdisciplinary Approaches to Environmental Issues. Application of concepts for the biological, physical and social sciences, economics, humanities and law, are used to understand the interdisciplinary complexities of environmental issues. Students will develop and demonstrate problem-solving skills as part of a team analyzing a regional environmental issue. Team-taught seminar style discussions. Prerequisite: PLB 301I and admission to Environmental Studies minor program.

FOR480 - Natural Resource Conflict Mgt 480-3 Natural Resource Conflict Management. Examines the role and methods of stakeholders in influencing natural resource policies. Emphasis on applied methods, techniques and strategies for conflict resolution, especially collaborative decision making and persuasion theory. Restricted to junior standing or consent of instructor.

FOR490A - Resource Mgmt Consortium 490A-2 Resources Management Consortium. Intensive field course in resources management decision making. Student serves as team member in solving resource problems in forestry, wildlife management, recreation, and interpretation at Land Between the Lakes. Enrollment is limited to six. Course taught at Land Between the Lakes. Not for graduate credit. Special approval needed from the instructor. Requires transportation, room and board fee not to exceed \$150 per course registration.

FOR492 - Special Studies Honor Students 492-1 to 4 Special Studies for Honor Students. Research and individual problems in forestry. Not for graduate credit. Prerequisite: a 3.0 minimum grade point average. Special approval needed from the department chair.

FOR494A - Practicum: For Env Assessment 494A-1 to 6 Practicum-Forest Environmental Assessment. Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization. Special approval needed from the instructor.

FOR494B - Practicum: Outdoor Rec Res Mgt 494B-1 to 6 Practicum-Outdoor Recreation Resource Management. Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization. Special approval needed from the instructor.

FOR494C - Practicum:For Resources Mgmt 494C-1 to 6 Practicum-Forest Resources Management. Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution, and public or private agencies. Students should enroll according to their curriculum specialization. Special approval needed from the instructor.

FOR500 - Principles of Research 500-2 Principles of Research. Research philosophy, approaches to research; theory, hypotheses inference, and predicting; problem identification, project development and organization; methods of data collection, analysis and presentation; drawing conclusions and organizing results.

FOR501 - Graduate Seminar 501-1 Graduate Seminar. Presentation and critiques of current research project of faculty, graduate student and selected resource persons.

FOR502 - Adv Watershed Hydro Mgmt 502-3 Advanced Watershed Hydrology and Management. A study of current issues relating to hydrology and the management of water resources in forested and mixed land-use watersheds. Readings, discussions and projects will focus on research and management topics in water quality and quantity at regional, national and international levels. Prerequisite: FOR 402 or FOR 430 or equivalent or consent of instructor.

FOR504 - Tree Physiology 504-2 Tree Physiology Concepts and Applications. A study of physiological concepts and attributes of trees that underlies growth, ontogeny, and reproduction in the context of genotype, environment, and their interaction. Physiological concepts will be presented and discussed in a framework that relates their influence on forest stand management applications and activities such as regeneration, tree planting, silvicultural activities in native forests and plantations, and stand response to disturbance, and the development and maintenance of old growth. Prerequisite: PLB 200 or FOR 331 or a plant physiology course.

FOR506 - Advanced Landscape Ecology 506-3 Advanced Landscape Ecology. (Same as FOR 406) (FOR 506-3 will have an additional lab requirement) Review and evaluation of current research and concepts in landscape ecology management. Principles of landscape ecology in the context of forested systems will be presented and discussed. Emphasis on how spatial heterogeneity and human activities influence landscape patterns. Prerequisite: G.I.S. course or consent of instructor.

FOR508 - Historical Ecology 508-2 Historical Ecology. Introduction to the basic concepts and foundations of historical ecology, a discipline which joins traditional ecology with an investigation of human landscape transformation. Emphasis is placed on the interdisciplinary approach to historical ecology with readings in pollen analysis, dendrochronology, land-use history, archival and historical sources, and traditional vegetation surveys and reconstructions. Offered alternate years. Prerequisite: 300 level plant ecology course or equivalent or consent of instructor. Field trip cost approximately \$35.

FOR510 - Adv Silviculture: Land Rehab 510-2 Advanced Silviculture: Landscape Rehabilitation. Current and emerging issues in silviculture and landscape-scale natural resource and agricultural sustainability are addressed at the individual manager/farmer or small community level. Case studies consider underlying physical and biological principles underlying successful rehabilitation practices

across a wide range of social contexts and physical landscapes. Experimental methodologies and their application to management problems are critiqued. Water, grazing, food crop, wildlife/biodiversity conservation, and biofuels are emphasized with accommodations for students with related interests. This course is intended for students with undergraduate training or practical backgrounds in natural resource management or agriculture and who are seeking to integrate these disciplines toward developing actionable solutions. Special approval needed from the instructor.

FOR511 - Adv Forest Resource Econ 511-2 Advanced Forest Resources Economics. Application of microeconomic, macroeconomic and capital theory to forest resource problems; introductory econometric methods; long range supply and demand projections; international forest economics and policy problems decision theory in forest resource management. Offered alternate years. Prerequisite: FOR 411 or equivalent or consent of instructor.

FOR512 - Tree Selection & Breeding 512-2 Tree Selection and Breeding. Quantitative methods of describing variation patterns of trees, testing genetic and environmental effects and interactions and evaluations of tree improvement program. Prerequisite: FOR 412 or consent of instructor.

FOR515 - Adv Urban Ecosystem Mgmt 515-3 Advanced Urban Ecosystem Management. An examination of concepts and processes associated with urban environments. Physical, chemical, and biological stresses associated with land use change and urban sprawl will be discussed and presented with a focus on water resources. Class discussion, readings, and projects will concentrate on current research in the urban environment. Restricted to graduate standing or consent of instructor.

FOR516 - Adv Forest Management 516-2 Advanced Forest Management. Case studies in forest land management, management planning, utilizing computer programming, CFI and TSI role in long range management planning. Offered alternate years-odd. Prerequisite: FOR 416, FOR 331 and summer camp or consent of instructor.

FOR520 - Adv Park Planning 520-2 Advanced Park Planning. Study of nature and functions of the recreation environmental planning process in theoretical and policy terms. Types of plans at local, regional and state levels. Evaluation of different types of planning approaches and their utility in particular situations. Offered alternate years. Prerequisite: FOR 421 or consent of instructor.

FOR521 - Recreation Behavior-Wildlands 521-2 Recreation Behavior in Wildlands Environments. Review of sociological and psychological theories relevant to outdoor recreation planning; management alternatives. Review of current behavior research in outdoor recreation. Application of behavioral concepts to recreation planning and administration. Offered alternate years.

FOR523 - Advanced Resource Interpretatn 523-2 Advanced Resource Interpretation. Survey of theories and methods relating to resource interpretation planning and practice resulting from research in communication, education and marketing. Examines case studies and existing issues current to the profession of interpretation. Stresses relationship between theory and application. Prerequisite: FOR 423 or consent of instructor. Offered alternate years.

FOR528 - Urban Tree Management 528-3 Urban Tree Management. Establishment and maintenance of trees as beneficial components of urban environments. Tree functionality is addressed from biological, social, and economic opportunities and constraints commonly associated with cities and towns. Management of trees and wooded areas within ecological urban landscapes is addressed from the perspective of multiple constituencies. This course is primarily intended to be taken as part of the ecological urban landscapes graduate program and is offered Online Only. May be taken as a substitute for FOR 428. Students who have achieved a passing grade in FOR 428 are not eligible to take this course.

FOR530 - Forest Site Evaluation 530-2 Forest Site Evaluation. A discussion of the factors affecting site quality and their use in present site evaluation methods. Lectures will draw upon recently published scientific literature as well as forest research data collected and analyzed for southern Illinois forests. Laboratories will include sampling of forest sites and stands with subsequent analysis of data using graphic and statistical techniques and a computer to develop site evaluation models. Prerequisite: BIOL 307 or consent of instructor. Cost: \$20.

FOR531 - Disturbance Ecology 531-2 Disturbance Ecology. Provide a historical overview and current perspective on major topics in forest ecology including natural disturbance, gap and patch dynamics, and relevant restoration ecology techniques. This is accomplished through a critical examination of the literature through reading, group discussions, and field trips. Two to three field trips will be organized during the semester to observe the effects of natural disturbance with an approximate total cost of \$25 per student. Offered alternate years. Prerequisite: 300 level plant ecology course (or equivalent) or consent of instructor.

FOR551 - Wildlife Habitat 551-3 Wildlife-Habitat Relationships. Theory and practice of analyses pertaining to the study of wildlife-habitat relationships. Understanding of common data collection techniques in wildlife and forestry science. Use of computers, statistical programs, and other forms of data analysis. Ability to work on practical and applied problems in wildlife conservation. Special approval needed from the instructor.

FOR585 - Human Dimensions of NRM 585-3 Human Dimensions of Natural Resource Management. Multidisciplinary study of influences and constraints on human-renewable natural resource interactions. Readings, discussion and problem solving to enhance appreciation of human dimensions as an integral component of natural resource management. Emphasis on diverse perspectives on forest, fisheries, and wildlife; conceptual frameworks and research methodologies. Offered alternate (odd) years.

FOR588 - International Grad Studies 588-1 to 6 International Graduate Studies. University residential graduate program abroad. Prior approval by the department is required both for the nature of program and the number of hours of credit.

FOR590 - Readings:Forest Resources 590-1 to 4 Readings in Forest Resources. Intensive consideration is given to current practices and problems in forestry. Special approval needed from the instructor.

FOR591A - Dir Stdy Forest Res-Dendrology 591A 1 to 4 Directed Studies in Forest Resources-Dendrology. Intensive study of disciplines fundamental to forestry. Study of the identification of native and exotic trees. Special approval needed from the instructor.

FOR591B - Dir Stdy For Res-Autecology 591B 1 to 4 Directed Studies in Forest Resources-Forest Autecology. Intensive study of disciplines fundamental to forestry. Study of the physiology of individual tree species in relation to their environment. Special approval needed from the instructor.

FOR591C - Dir Stdy For Res-Comm Ecology 591C 1 to 4 Directed Studies in Forest Resources-Forest Community Ecology. Intensive study of disciplines fundamental to forestry. Study analysis and integration of tree growth, forest structure and classification in relation to climate/edaphic factors as an ecological basis for forest management. Special approval needed from the instructor.

FOR591D - Dir Stdy Forest Measurements 591D 1 to 4 Directed Studies in Forest Resources-Forest Measurements. Intensive study of disciplines fundamental to forestry. Study of measurement, statistical and data processing concepts; volume, growth, yield of forest products and methods of sampling forest resources. Special approval needed from the instructor.

FOR591E - Dir Stdy Forest Recreation 591E 1 to 4 Directed Studies in Forest Resources-Forest Recreation. Intensive study of disciplines fundamental to forestry. Study of principles and methods for land-use planning of park and recreation environments. Special approval needed from the instructor.

FOR591F - Dir Stdy For Res-Silviculture 591F 1 to 4 Directed Studies in Forest Resources-Silviculture. Intensive study of disciplines fundamental to forestry. Study of concepts and techniques utilized in the silvicultural treatment of forests. Special approval needed from the instructor.

FOR591G - Dir Stdy For Res-Wild Fire Mgt 591G 1 to 4 Directed Studies in Forest Resources-Wildland Fire Management. Intensive study of disciplines fundamental to forestry. Study of all aspects of fire as a phenomenon in wildland management. Special approval needed from the instructor.

FOR591H - Dir Stdy Forest Soils 591H-1 to 4 Directed Studies in Forest Resources-Forest Soils. Intensive study of disciplines fundamental to forestry. An introduction to the characterization and fundamental concepts of forest soils and their relationships to forest communities and forest management

practices. Emphasis is on the chemical, biological, and physical properties of forest soils as related to forests and forest management.

FOR593 - Individual Research 593-1 to 4 Individual Research. Directed research in selected fields of forestry.

FOR599 - Thesis 599-1 to 6 Thesis. A Minimum of three and a maximum of six hours to be counted toward a Master's degree.

FOR601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Forestry Faculty

Akamani, Kofi, Assistant Professor, Ph.D., University of Idaho, 2011.
Burde, John H., III, Professor, Emeritus, Ph.D., University of Arizona, 1975.
Carver, Andrew D., Professor, Ph.D., Purdue University, 1998.
Chilman, Kenneth C., Associate Professor, Emeritus, Ph.D., University of Michigan, 1972.
Groninger, John W., Professor, Ph.D., Virginia Polytechnic Institute and State University, 1995.
Holzmueller, Eric J., Professor, Ph.D., University of Florida, 2006.
Mangun, Jean C., Associate Professor, Emeritus, Ph.D., Purdue University, 1991.
Nielsen, Clayton K., Professor, Ph.D., Southern Illinois University, 2001.
Park, Logan O., Associate Professor, Ph.D., Virginia Polytechnic Institute and State University, 2009.
Phelps, John, E., Professor, Emeritus, Ph.D., University of Missouri, 1980.
Roth, Paul L., Professor, Emeritus, Ph.D., Kansas State University, 1968.
Ruffner, Charles M., Professor, Ph.D., Pennsylvania State University, 1999.
Schoonover, Jon E., Professor, Ph.D., Auburn University, 2005.
Willard, Karl W. J., Professor, Ph.D., Pennsylvania State University, 1999.
Zaczek, James J., Professor and Chair, Ph.D., Pennsylvania State University, 1994.

Forensic Science

The Forensic Science minor is an interdisciplinary program of study. It is designed to provide undergraduates with a basic understanding of the ways forensic scientists evaluate physical evidence in criminal investigations, and explore the legal and ethical ramifications of this work. Students pursuing focused majors in preparation for employment or graduate studies in Forensics-related fields can use the minor to inform and broaden their studies on related issues. The program is also intended to develop critical knowledge and skills for evaluating forensic evidence in law, literature, and public media portrayals of forensic scientists.

It is strongly recommended that the SIUC Core Curriculum requirements be satisfied as follows: Social Sciences: ANTH 104; Human Health: PHSL 201 (or 310); Science Group I: CHEM 106; Science Group II: ZOOL 115 (or 118); Integrative Studies Multicultural: CCJ 203 or ANTH 202.

Required courses for the Forensic Science Minor amount to 15 hours, including 9 hours of required courses and 6 hours of electives (with no more than 4 of the minimum 6 hours of electives from a single discipline/department).

Forensic Science Minor

Degree Requirements	Credit Hours
Required Core Courses: ANTH 231, CCJ 201, CHEM 173	9
Electives: (note, some have prerequisites):AH 313; ANTH 240A, ANTH 440B, ANTH 441D, ANTH 455A, ANTH 455H, ANTH 465 (Internship in Forensics - must be arranged individually); BIOL 305; CCJ 290, CCJ 310, CCJ 330, CCJ 408; CHEM 439; PHIL 104, PHIL 340; PHSL 301; PLB 300, PLB 330; POLS 334; PSYC 305, PSYC 431, PSYC 440; SOC 372	6
Total	15

Geography and Environmental Resources

Geography and Environmental Resources is the study of place and space; the intersection of the physical environment and human activities; patterns of climate, land forms, soils and water. Majors earning a Bachelor of Science degree in Geography and Environmental Resources study the environment in the field, the computer laboratory, and the traditional classroom. Job opportunities for our degree are broad and diverse. For example, graduates of our program have careers that include: Recycling Coordinator, Social Studies Teacher, GIS Coordinator, Geospatial Intelligence Analyst, Environmental Educator, Cartographer, Emergency Manager, Natural Resource Consultant, Regional Planner, Water Quality Manager, among others.

SIU Carbondale's Department of Geography and Environmental Resources focuses on environmental sustainability. Faculty expertise is in water resources, land use, climatology, and geospatial techniques. Our courses are taught by faculty with excellent national and international reputations in their fields. We take an integrated environmental problem-solving approach in our courses. Our Environmental GIS Laboratory and Advanced Geospatial Analysis Laboratory train students to use current GIS and remote sensing technologies for environmental analysis. Many courses have labs to provide students with more personal attention. We also have an active mentoring program, through which every undergraduate has access to a faculty mentor.

Our undergraduate program is divided into two parts: Major Courses and Specialization. First, there are seven courses taken by all Geography and Environmental Resources majors to ensure that all of our students have an understanding of key concepts and tools used by professionals in the field. Then, students select one of three areas of specialization: 1) Environmental Sustainability is intended for students who want a broad background in the social and environmental sciences that relates to environmental planning and management, 2) Geographic Information Science is intended for students who are interested in applying geospatial technologies to geographic and environmental problems, or 3) Climate and Water Resources is for students interested in weather, climate and surface water resources.

Practical experience is an important part of our program. We have an active internship program that places students with local natural resource agencies. Students receive academic credit for these internship and cooperative work experiences. Our department provides several awards and scholarships for outstanding undergraduate majors. We welcome all students and invite them to participate in department activities. We have a diverse faculty and we actively promote diversity among our faculty, staff, and students.

GENV students need a solid mathematics background to prepare them for advanced-level courses. We strongly recommend that GENV majors fulfill the University Core Curriculum requirement by taking MATH 108, College Algebra.

Bachelor of Science Degree in Geography and Environmental Resources, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	9-12
Requirements for Major in Geography and Environmental Resources	42
Geography and Environmental Resources Major Courses GEOG 300I, GEOG 303I, GEOG 401, GEOG 433, and GEOG 404 or GEOG 412	15
Two of the following: GEOG 100, GEOG 103, GEOG 104, GEOG 304, GEOG 310I, GEOG 320, or GEOG 330	6
Specialization (one of the following)	21
Environmental Sustainability:	
GEOG 320, GEOG 424, GEOG 436, GEOG 439; and three additional GEOG classes at the 400-level	15 or
Geographic Information Science (GIS):	
GEOG 406, GEOG 408, GEOG 416, GEOG 420 and three additional GEOG classes at the 400-level	15 or
Climate and Water Resources:	
GEOG 330, GEOG 431, GEOG 434, GEOG 439 and three additional GEOG courses at the 400-level	15
Electives	27-30
Total	120

Geography and Environmental Resources Minor

A minor in geography and environmental resources consists of 15 credit-hours from a combination of the core courses and any one of the specializations.

GIS Minor

The Undergraduate GIS Minor enables students to focus on the fundamentals of geospatial techniques and analytical skills. This minor meets the needs of the expanding job opportunities for undergraduate students. This minor ensures that students understand earth-map relationships; understand principles of cartography; know the technical aspects of remote sensing and have competence in visual interpretation and digital processing and analysis of imagery; understand the basic representation and modeling of spatial data in GIS. Further, they will demonstrate an understanding of GIS concepts, database management, and the process of decision-making in the GIS context and obtain yield basic skills of

spatial analysis and modeling and the analytical capabilities of ESRI's ArcGIS and ERDAS IMAGINE. Finally, they will be competent in planning, developing, and implementing a major GIS project.

Course Requirement: The program requires students to complete 18 credit hours of undergraduate level coursework, as follows: GEOG 310I, GEOG 401, GEOG 404, GEOG 406, GEOG 416, GEOG 428.

Sustainability Minor

The Undergraduate Minor in Sustainability enables students to expand their knowledge and understanding of the long-term sustainable use of the earth's resources, including water, land use and food systems, climate change, urban sustainability, and "green" energy. This minor meets the needs of the expanding job opportunities in environmental sustainability.

Course Requirement: Students must maintain a 2.7 GPA in the certification courses. The program requires students to complete at least 15 credit hours of coursework, as follows: GEOG 300I, GEOG 320, and GEOG 424, and two of the following: GEOG 421, GEOG 422, GEOG 426, GEOG 429, GEOG 431, GEOG 435, GEOG 436, GEOG 439, GEOG 454, GEOG 480, GEOG 481.

Geography and Environmental Resources Honors Program

The Geography and Environmental Resources Honors Program is a program within the major that is designed to recognize the outstanding scholarship of our top students and reward them with additional challenging and stimulating course options. Participation in the GENV Honors Program is contingent upon a student's admission to the University Honors Program (UHP). The UHP requirements are found at: honors.siu.edu. Honors students in our major should meet with the department Chair to discuss their interests and determine their course schedules.

Honors courses in Geography and Environmental Resources are: open to GENV majors; have prerequisites as listed by course number in the next section below; and have special assignments as arranged with each instructor.

Geography and Environmental Resources Courses

GEOG100 - Environmental Conservation 100-3 Environmental Conservation. (University Core Curriculum) Human activity has changed every place on planet Earth. This course explores how and where these changes take place, and practical ways people can interact with the environment in a more sustainable manner. Themes to be explored include: biodiversity, global climate change, human population growth, and sustainability of food, soil, and water resources. Through lectures, discussions, and field trips students will investigate and map patterns integral to understanding environmental conservation issues.

GEOG103 - World Geography 103-3 World Geography. (University Core Curriculum) [IAI Course: S4 900N] Examination of the world's major geographic patterns, the diversity of environments, cultures and economic activities, differences between developing and developed nations, interdependence of nations and regions through communication and trade and in-depth assessment of representative environmental issues.

GEOG104 - Weather Climate Society 104-3 Weather, Climate, and Society. (University Core Curriculum) A scientific introduction to the physical processes responsible for weather and climate and the application of fundamental scientific skills to address aspects of weather and climate that are of particular importance to society at large. Lab fee: \$20.

GEOG300I - People, Geog & Environment 300I-3 People, Geography, and the Environment. (University Core Curriculum) The goal of this course is to understand complex relationships between humans and the natural environment, using a geographic perspective. Students will acquire knowledge to analyze and understand coupled human and natural systems at multiple scales-local, region, national and global. Emphasis on: 1) a science-based systems approach; 2) the role of geography as a key discipline that

spans the social and physical sciences; 3) the importance of interdisciplinary perspectives; 4) issues of collaboration, institution building, and policy development.

GEOG303I - Physical Geography 303I-3 Physical Geography. (University Core Curriculum) [IAI Course: P1 909L] This course provides students with an overview of the earth's physical and biogeographic systems. Emphasis is placed on 1) understanding the role of geomorphology, climate, and biogeography in the shaping of the Earth's environment and 2) development of skills related to observation and analysis of environmental processes. Lab Fee: \$20.

GEOG304 - Geography of Globalization 304-3 Geography of Globalization. Evolution of the world economic system over time and space emphasizing the recent rapid increase in economic interdependency among nations, regions, and urban and rural areas. Changing global patterns of production and trade in nature resources, manufactured goods, services, information, and economic control are emphasized. This course satisfies the CoLA Writing-Across-the-Curriculum requirement.

GEOG310I - Intro to GIS 310I-3 Introduction to Geographic Information Systems. (University Core Curriculum) An interdisciplinary course that provides students the skills and knowledge to use geospatial technologies such as geographic information systems (GIS), global positioning systems (GPS), and remote sensing. Applications drawn from diverse fields: environmental science, ecology, social sciences and others. Course includes lectures, discussions, interactive and hands-on computer exercises and projects. Lab fee: \$20.

GEOG312 - Intro GPS, LiDAR, Radar 312-3 Introduction to GPS, LiDAR, and Radar Applications. This course provides the practical skills, knowledge, and understanding of quantitative measurement tools in the field of environmental and geospatial applications. The course focuses on the basic concepts and applications of GPS (Global Positioning System), LiDAR (Light Detection and Ranging), and Radar systems. Use of the GPS, a way of accurately determining positions on the earth has grown exponentially and is currently used in mapping, navigation, surveying, agriculture, construction, vehicle tracking and recovery, archaeology, biology, cell phones and automobiles. The course also introduces fundamental concepts of accuracy assessment and appropriate use of these data products. Students will also master the basic skills needed to leverage these data sources and information products in the context of application domains. Course component includes lectures, labs, and field work.

GEOG320 - Intro Environ Sustainability 320-3 Introduction to Environmental Sustainability. The course provides students with an introduction to the philosophy and tools of environmental sustainability, with an emphasis on the integration of the ecological, economic and social aspects of sustainability. The aim of the course is to provide students with practical examples of the methods used to design, implement and assess environmental sustainability at multiple management levels. The course examines issues and case studies with a local through global perspective. Prerequisites: None.

GEOG330 - Physical Climatology 330-3 Physical Climatology. Contemporary view of earth's climate system and its relevant processes from an advanced, physical perspective. Topics covered include energy balance, the hydrologic cycle, atmospheric and oceanic general circulation, interactions between the atmosphere, ocean, and land at a variety of spatial and temporal scales, and modeling and predicting these processes and interactions with appropriate models. Prerequisite: GEOG 104 with a grade of C or better, or consent of instructor.

GEOG361 - Regional Geography of the US 361-3 Regional Geography of the United States. A survey of environmental, economic, and historical factors and problems in the development of the United States and its regions. Analysis of population trends, assessment of economic activities, and analysis of transportation networks from a geographic perspective are introduced. Some attention is given to the United States in the world economy.

GEOG401 - Geographic Information Systems 401-3 Geographic Information Systems. This course will prepare students with comprehensive working knowledge and technical skills related to geographic information systems (GIS). It covers important topics in the context of GIScience, including coordinate systems and georeferencing, data structures (vectors and rasters), map principles and design, spatial analysis and modeling, GIS software, GPS, GIS data sources, and data uncertainty, which are critical to support the implementation of a GIS project. A series of GIS labs and a final class project will help equip

students with necessary skills (e.g., mapping, spatial analysis, and geocoding) to fulfill the tasks of an entry-level GIS position. Recommended: GEOG 310I or CE 263. Lab fee: \$20.

GEOG404 - Spatial Analysis 404-3 Spatial Analysis. This spatial analysis course is an introduction to statistical methods for geographers. The course provides an overview of the application of spatial statistical theories, concepts and approaches in the general context of the emerging fields of geographic information system (GIS) and science (GISci). The main focus of this course is on how techniques for the analysis of spatial data can effectively be applied in a GIS environment, with a particular emphasis on the study of spatial patterns, distribution, and associations. Prerequisite: GEOG 401 with a grade of C or higher, or consent of instructor. Lab fee: \$20.

GEOG406 - Intro to Remote Sensing 406-3 Introduction to Remote Sensing. An introduction to the fundamentals of remote sensing as applied to environmental management. This course will examine the theoretical and practical aspects associated with the use and analysis of aerial photography and satellite imagery. These include how remote sensing data are acquired, displayed, analyzed and how information on our environment can be extracted from such data. Students will be introduced to manual interpretation and digital image processing techniques of remotely sensed imagery. Students will have the opportunity to gain hands-on experience using image processing software. Lab fee: \$30.

GEOG408 - Advanced Remote Sensing 408-3 Advanced Remote Sensing. Advanced techniques in the analysis of remotely sensed data. Emphasis is placed on digital image processing using state-of-the-art technology. Students will be expected to develop individual problem-driven projects that use the knowledge, tools and techniques that are developed in this course. Prerequisite: GEOG 406, with a grade of C or higher, or consent of instructor. Lab fee: \$30.

GEOG412 - Applied Geographic Stats 412-3 Applied Geographic Statistics. Introduction to basic statistical methods and skills related to the application of statistics to problems in geography. Lectures are supplemented with practical exercises to stress the applied nature of statistics in environmental problem solving. Topics covered include descriptive statistics, time series, probability, point and interval estimation, hypothesis testing, correlation and regression, analysis of variance, and spatial statistics.

GEOG416 - Cartographic Design 416-3 Cartographic Design. Introduction to the concepts and principles of map design and automated cartographic techniques used to promote the understanding of a map as a powerful communication model. Examines techniques for the representation, manipulation, display, and presentation of spatial data using computer mapping techniques and graphics software. Team based projects will address a geographic problem and produce a professional final map. Prerequisite: GEOG 401, with grade of C or higher, or consent of instructor. Lab fee: \$20.

GEOG417 - GIS Programming 417-3 GIS Programming and Customization. GIS programming trains students in customizing GIS applications and streamlining spatial analysis by assembling functions provided by the underlying GIS platforms. This course is an introduction to programming and scripting for intermediate GIS users who need to automate the geoprocessing of GIS datasets. This course focuses the most popular commercial platform, ArcGIS ModelBuilder and Python Scripting for ArcGIS. Through this course, students will understand the object-oriented programming principles, master the advanced skills of building a complex work flow for GIS analysis, and develop customized geoprocessing programs to edit, manipulate and analyze spatial data using ArcPy and Python. Prerequisite: GEOG 401 with grade of C or higher, or consent of instructor. Lab fee: \$20.

GEOG419 - Enterprise GIS Planning 419-3 Enterprise GIS Planning and Implementation. Students will gain both theoretical and practical understanding of the design process of enterprise GIS; be able to assess the scope of a system and address data and technology requirements of that system; become exposed to a host of the state-of-the-art tools and concepts in enterprise GIS; and learn skills for hardware, software and computer networking issues. Students are expected to have a basic working knowledge of ArcGIS and ArcIMS. Prerequisite: GEOG 401 or consent. Lab fee: \$20.

GEOG420 - Advanced GIS Studies 420-3 Advanced (GIS) Studies. This course focuses on advanced conceptual and technical issues underlying GIS, including GIS data modeling, geodatabase model and structure, analytical methods and procedures associated with geospatial modeling, and the latest developments in geospatial sciences. Laboratory assignments include the analysis of digital geographic information of physical and social phenomena, emphasizing the use of standard GIS software to illustrate techniques of geodatabase, map digitization, spatial data exploration, spatial analysis/modeling, and

GIS-based decision support. Students have the opportunities of designing, implementing and presenting a GIS project that takes full advantage of the advanced GIS theories and techniques to solve spatial problems chosen by students. Prerequisite: GEOG 401 with grade of C or higher or consent of instructor. Lab fee: \$20.

GEOG421 - Urban Sustainability 421-3 Urban Sustainability. Sustainability of urban areas is viewed from a geographical perspective to focus on the complex relationships among environmental, sociocultural, economic, and political phenomena. Considerable time is devoted to identifying, analyzing and explaining selected urban problems and their sustainable solutions.

GEOG422 - Environ & Energy Economics 422-3 Environmental and Energy Economics. Economics of renewable and nonrenewable natural resources management and environmental policy. Topics covered include: static and dynamic efficiency, market efficiency and market failures (market power, externalities and public goods), the economics of nonrenewable resource extraction, renewable resources management (with a focus on forests and water), mechanism design choices and their implementation in the real world, and the role of the private and public sectors in research and development.

GEOG422H - Environ & Energy Economics 422H-3 Environmental and Energy Economics. (University Honors Program) (Same as GEOG 422, GEOG 522) Economics of renewable and nonrenewable natural resources management and environmental policy. Topics covered include: static and dynamic efficiency, market efficiency and market failures (market power, externalities and public goods), the economics of nonrenewable resource extraction, renewable resources management (with a focus on forests and water), mechanism design choices and their implementation in the real world, and the role of the private and public sectors in research and development.

GEOG424 - Sustainable Development 424-3 Sustainable Development. Analysis of the human, economic, technological, environmental and political dimensions of sustainable development focusing on public and private sector institutions that manage renewable and non-renewable natural resources. Emphasis is sustainable development as applied to: (a) population, (b) energy and the atmosphere, and (c) agricultural impacts on soil and water resources.

GEOG424H - Sustainable Development 424H-3 Sustainable Development. (University Honors Program) Open to undergraduates. Available for Honors credit by special arrangement. Not for graduate credit.

GEOG426 - US Environmental Policy 426-3 US Environmental Policy. This course investigates the US system of environmental regulation: the background of social and environmental movements that influence US policy and the agencies involved in US environmental regulation. Emphasis is on US regulations and US participation in global environmental policies. Overall, the focus is on spatial variations in environmental regulations; or the geography of environmental quality.

GEOG428 - GIS Portfolio/Capstone Project 428-3 GIS Portfolio/GIS Capstone Project. Independent development and implementation of a major GIS project based on analysis of spatially referenced data sets to produce digital products and to solve real world problems. Data obtained from multiple sources, including downloads from online sources, field-collected data, and published map data. A project portfolio and a poster approved by the instructor must be submitted for successful completion. Prerequisite: GEOG 401 and GEOG 406, with a grade of C or higher, or consent of instructor. Lab fee: \$20.

GEOG429 - Geog Local/Organic Food 429-3 Geography of Local and Organic Food. A discussion of geographic topics in local and organic food and farming. This includes: spatial distributions, landscapes, policy influences, organic agricultural productivity, food safety, consumer concerns, organic farmers' decision making, organic marketing, local food systems, and organic certification.

GEOG430 - Environmental Systems Analysis 430-3 Environmental Systems Analysis. Exploration of the major environmental systems relevant to planning. Topics include concepts of systems and system behavior; basics of systems analysis and modeling environmental systems; environmental fluxes of energy and materials (e.g., hydrologic cycle, carbon cycle, energy budgets, erosion and sediment transport, role of biosphere in organizing fluxes); environmental variability.

GEOG431 - Climate Data Analysis 431-3 Climate Data and Analysis. This course focuses on identifying, locating, and applying appropriate climate data sets (e.g., station observations, atmospheric

reanalyses, and climate model output), techniques for obtaining and processing these data sets, and methods commonly used for applied climate analysis. Student-lead, applied research projects provide students with the opportunity to utilize a variety of data sets and analytical tools introduced during the semester. The curriculum is organized around current practical problems from a variety of disciplines and identifying and analyzing appropriate data sets to address them. Students will become familiar with a range of computational packages, including Excel, SPSS, and Matlab. Students should have a basic understanding of climatology and statistics prior to taking this class. Prerequisite: GEOG 330, with a grade of C or higher, or consent of instructor.

GEOG431H - Climatology 431H-3 Climatology. (University Honors Program) Open to undergraduates. Available for Honors credit by special arrangement. Prerequisite: GEOG 330, or consent.

GEOG433 - Field Methods in Geography 433-3 Field Methods in Geography. Quality geographic research depends on obtaining reliable data through an informed research design. Exploring both social and environmental processes, students will actively participate in developing and conducting investigations. Using the SIU Carbondale campus and surrounding region as a laboratory, lab exercises will include human geography, geomorphology, climatology and biogeography. Analytical techniques will include introductory statistics and mapping. Prerequisite: GEOG 303I with a minimum grade of C. Not for graduate credit. Restricted to junior and senior majors in Geography and Environmental Resources or consent of instructor. Lab fee: \$20.

GEOG433H - Field Methods in Geography 433H-3 Field Methods in Geography. (University Honors Program) Open to undergraduates. Available for Honors credit by special arrangement. Prerequisite: GEOG 303I with a minimum grade of C. Restricted to junior and senior majors in Geography and Environmental Resources or consent of instructor.

GEOG434 - Water Resources Hydrology 434-3 Water Resources Hydrology. This course covers the major components of the hydrologic cycle with emphasis on surface water and fluvial (stream) processes. Students will gain a detailed understanding of the major hydrologic processes and develop substantial experience in collecting, compiling, and analyzing hydrologic data for use in water resource analysis and management.

GEOG435 - Energy Planning 435-3 Energy Planning. Regional and national differences in energy supply and demand are reviewed followed by a study of current energy resources, the range of demands and environmental impacts. National and international planning strategies for dealing with changes in energy demand and supply are explored and assessed for present and future implementation probability.

GEOG436 - Natural Hazards 436-3 Natural Hazards. This course introduces students to the geophysical and human dimension of natural hazards and focuses on five main areas: 1) characterization of natural hazards; 2) human dimensions of natural hazards; 3) natural hazard risk assessment; 4) natural hazard mitigation planning; 5) the use of geospatial tools and models used in risk assessments and mitigation planning activities. Students will develop a fundamental understanding of both geophysical and human dimensions of natural hazards and an awareness of how natural hazards can develop into disasters.

GEOG439 - Global Climate Change 439-3 Global Climate Change. This course examines the major environmental, social and policy, issues relevant to global climate change, including natural and anthropogenic causes, environmental pollution, land use/land cover change, extinction and biodiversity issues, and potential climate change-related impacts on human health.

GEOG439H - Global Climate Change 439H-3 Global Climate Change. (University Honors Program) Open to undergraduates. Available for Honors credit by special arrangement.

GEOG440 - Water Resources Management 440-3 Water Resources Management. This interdisciplinary course is taught in a hybrid lecture/seminar style. Students review the physical science, biological science, and environmental policy which underpin water resource management. In addition, students explore human impacts on water resources and the role that water management plays in striking a sustainable balance between needs of humans and aquatic ecosystems.

GEOG452 - Environment & Population 452-3 Environment and Population. Introduction to population geography. Emphasis is on the relationships between population trends, resource use patterns and environmental impacts. Topics include methods and data used to describe and predict populations,

theories of population and policy issues that relate to the interaction between population, quality of life and environmental quality. Prerequisite: GEOG 320 or consent of instructor.

GEOG454 - Environmental Movements 454-3 Conservation and Environmental Movements. Emphasizes the ways in which humans view and interact with the environment. Conservation literature and the works of influential environmentalists are studied. Specific theories and environmental movements which help to explain society's current perception and use of the environment are studied.

GEOG456 - Geographic Visualization 456-3 Geographic Visualization. This course will provide an overview of geographic visualization with a concentration on the theories, concepts and approaches of information visualization. Lectures and laboratory exercises will focus on the practical issues of exploratory data analysis (EDA), cartographic design process, web cartography, data quality and generalization, thematic mapping, map animation and multimedia applications. The course will provide students with a working knowledge of commercial software commonly used for graphic-based applications. Students are expected to utilize the hands-on experience gained from the lab exercises to further enhance their proficiency in graphic software. Two hours of seminar and classroom presentations, two hours of studio exercises each week. Lab fee: \$30.

GEOG457 - American Environmental History 457-3 American Environmental History. (Same as HIST 457) An exploration of the attitudes toward and the interaction with the natural resource environment of North America by human settlers. Coverage from the Neolithic Revolution to the present.

GEOG458 - Applied GIS 458-3 Applied GIS. This course provides practical GIS applications and draws from special topics in data visualization and environmental applications. The topic on data visualization includes an overview of techniques for visualizing large-scale datasets and is inspired by concepts from information visualization. Topics in environmental applications consist of risk assessment, digital elevation model processing, and watershed delineation and hydrological modeling. Students taking this course will distinctively learn: (1) how to visualize geographic data; (2) how to use different environmental risk assessment methods; (3) how to assess, detect, and characterize environmental risks and potential threats; and (4) how to create meaningful visualization scenes to support environmental decision-making. Active learning experiences will be achieved through the use of classroom lectures, lab exercises, group tasks, and presentations. Prerequisite: GEOG 401 or GEOG 310I or consent of instructor. Lab fee: \$20.

GEOG470 - Contemp Issues Env Studies 470-3 Contemporary Issues in Environmental Studies. Background, current, and future issues linking social responses to scientifically relevant environmental issues. Students learn about the multiple geographic, social and ecological factors that influence environmental citizenship and participation. Topics include conservation/preservation, green jobs, environmental non-governmental organizations, policy influences, and environmental education. Lectures, guest lectures and seminar style discussions. Students develop and demonstrate skills in problem solving, communication, and professionalism.

GEOG471 - Environmental Impact Analysis 471-3 Environmental Impact Analysis. Techniques of assessing the impact of human activities on the environment, including weighting schemes, cost-benefit analysis, linear programming, ecological impact assessment. Emphasis is on placing NEPA and EIS writing in legal, economic, and environmental perspective.

GEOG480 - Internship in Geography 480-2 to 6 Internship in Geography. Supervised field work in private or public organization dealing with environmental sustainability or GIS. A report or professional poster on the work is required at the end of the semester. Courses may be repeated, but no more than 3 credit hours of either 480 or 481 may be applied to an undergraduate major or graduate degree. Restricted to students majoring in Geography and Environmental Resources or minoring in Environmental Studies. Special approval needed from the department.

GEOG480H - Internship in Geography 480H-3 to 6 Internship in Geography. (University Honors Program) Open to undergraduates. Available for Honors credit by special arrangement. Restricted to Geography major or consent.

GEOG481 - Coop Work Exp Geography 481-3 to 12 Cooperative Work Experience in Geography. Placement of advanced undergraduate or graduate student in private or public organization for one or more semesters in paid career-related position identified by student. Student gains professional experience, under faculty and on-site supervision. A report or professional poster on the work is required

at the end of the semester. Three credit hours of either 480 or 481 may apply toward requirements for a Geography undergraduate major or graduate degree. Restricted to students majoring in Geography and Environmental Resources or minoring in Environmental Studies. Special approval needed from the department.

GEOG487A - Honors in Geography: Tutorial 487A-1 Honors in Geography-Honors Tutorial. Must be spread over the last two years of the undergraduate's career. May be taken in either A, B, C, or B, A, C sequence. Special approval needed from the department.

GEOG487B - Honors in Geography: Reading 487B-2 Honors in Geography-Honors Reading. Must be spread over the last two years of the undergraduate's career. May be taken in either A, B, C, or B, A, C sequence. Special approval needed from the department.

GEOG487C - Honors in Geography: Research 487C-3 Honors in Geography-Honors Supervised Research. Must be spread over the last two years of the undergraduate's career. May be taken in either A, B, C or B, A, C sequence. Prerequisite: GEOG 487A & B or consent of department.

GEOG490 - Readings in Geography 490-2 to 4 Readings in Geography. Supervised readings in selected subjects. Restricted to geography majors.

GEOG500 - Principles of Research 500-3 Principles of Research. This course teaches students the key components of graduate research: identify a research problem, determine research questions, structure a literature review, and develop research methods. Examples of geographic research are discussed and students work to identify independent research projects. The course culminates with students developing their own research proposals.

GEOG501 - Sem Geog & Env Research 501-3 Seminar in Geography and Environmental Research. Seminar approach to problems of completing background research design of project statements, identification of research methodology and completion of thesis/dissertation project statements. Restricted to graduate standing.

GEOG502 - Geographic Information Systems 502-3 Geographic Information Systems. This course will prepare students with comprehensive working knowledge and technical skills related to geographic information systems (GIS). It covers important topics in the context of GIScience, including coordinate systems and georeferencing, data structures (vectors and rasters), map principles and design, spatial analysis and modeling, GIS software, GPS, GIS data sources, and data uncertainty, which are critical to support the implementation of a GIS project. A series of GIS labs and a final class project will help equip students with necessary skills (e.g., mapping, spatial analysis, and geocoding) to fulfill the tasks of an entry-level GIS position. Recommended: GEOG 310I or CE 263. Lab fee: \$20.

GEOG504 - Spatial Analysis 504-3 Spatial Analysis. This spatial analysis course is an introduction to statistical methods for geographers. The course provides an overview of the application of spatial statistical theories, concepts and approaches in the general context of the emerging fields of geographic information system (GIS) and science (GISci). The main focus of this course is on how techniques for the analysis of spatial data can effectively be applied in a GIS environment, with a particular emphasis on the study of spatial patterns, distribution, and associations. Prerequisite: GEOG 401 or GEOG 502, with grade of C or higher, or consent of instructor. Lab fee: \$20.

GEOG506 - Intro to Remote Sensing 506-3 Introduction to Remote Sensing. An introduction to the fundamentals of remote sensing as applied to environmental management. This course will examine the theoretical and practical aspects associated with the use and analysis of aerial photography and satellite imagery. These include how remote sensing data are acquired, displayed, analyzed and how information on our environment can be extracted from such data. Students will be introduced to manual interpretation and digital image processing techniques of remotely sensed imagery. Students will have the opportunity to gain hands-on experience using image processing software. Lab fee: \$30.

GEOG508 - Advanced Remote Sensing 508-3 Advanced Remote Sensing. Advanced techniques in the analysis of remotely sensed data. Emphasis is placed on digital image processing using state-of-the-art technology. Students will be expected to develop individual problem-driven projects that use the

knowledge, tools, and techniques that are developed in this course. Prerequisite: GEOG 406 or GEOG 506, with grade of C or higher, or consent of instructor. Lab fee: \$30.

GEOG512 - Applied Statistics 512-3 Applied Geographic Statistics. Introduction to basic statistical methods and skills related to the application of statistics to problems in geography. Lectures are supplemented with practical exercises to stress the applied nature of statistics in environmental decision making. Topics covered include descriptive statistics, time series, probability, point and interval estimation, hypothesis testing, correlation and regression, analysis of variance, and spatial statistics.

GEOG516 - Cartographic Design 516-3 Cartographic Design. Introduction to the concepts and principles of map design and automated cartographic techniques used to promote the understanding of a map as a powerful communication model. Examines techniques for the representation, manipulation, display, and presentation of spatial data using computer mapping techniques and graphics software. Team based projects will address a geographic problem and produce a professional final map. Prerequisites: GEOG 401 or GEOG 502, with grade of C or higher, or consent of instructor. Lab fee: \$20.

GEOG517 - GIS Programming 517-3 GIS Programming and Customization. GIS programming trains students in customizing GIS applications and streamlining spatial analysis by assembling functions provided by the underlying GIS platforms. This course is an introduction to programming and scripting for intermediate GIS users who need to automate the geoprocessing of GIS datasets. This course focuses the most popular commercial platform, ArcGIS ModelBuilder and Python Scripting for ArcGIS. Through this course, students will understand the object-oriented programming principles, master the advanced skills of building a complex work flow for GIS analysis, and develop customized geoprocessing programs to edit, manipulate and analyze spatial data using ArcPy and Python. Prerequisite: GEOG 401 or GEOG 502, with grade of C or higher, or consent of instructor. Lab fee: \$20.

GEOG520 - Advanced GIS Studies 520-3 Advanced GIS Studies. This course focuses on advanced conceptual and technical issues underlying GIS, including GIS data modeling, geodatabase model and structure, analytical methods and procedures associated with geospatial modeling, and the latest developments in geospatial sciences. Laboratory assignments include the analysis of digital geographic information of physical and social phenomena, emphasizing the use of standard GIS software to illustrate techniques of geodatabase, map digitization, spatial data exploration, spatial analysis/modeling, and GIS-based decision support. Students have the opportunities of designing, implementing and presenting a GIS project that takes full advantage of the advanced GIS theories and techniques to solve spatial problems chosen by students. Prerequisite: GEOG 401 or GEOG 502, with grade of C or higher, or consent of instructor. Lab Fee: \$20.

GEOG521 - Urban Sustainability 521-3 Urban Sustainability. Sustainability of urban areas is viewed from a geographical perspective to focus on the complex relationships among environmental, sociocultural, economic, and political phenomena. Considerable time is devoted to identifying, analyzing and explaining selected urban problems and their sustainable solutions.

GEOG522 - Environ & Energy Economics 522-3 Environmental and Energy Economics. Economics of renewable and nonrenewable natural resources management and environmental policy. Topics covered include: static and dynamic efficiency, market efficiency and market failures (market power, externalities, and public goods), the economics of nonrenewable resource extraction, renewable resources management (with a focus on forests and water), mechanism design choices and their implementation in the real world, and the role of the private and public sectors in research and development.

GEOG524 - Sustainable Development 524-3 Sustainable Development. Analysis of the human, economic, technological, environmental and political dimensions of sustainable development focusing on public and private sector institutions that manage renewable and non-renewable natural resources. Emphasis is sustainable development as applied to: (a) population, (b) energy and the atmosphere, and (c) agricultural impacts on soil and water resources.

GEOG526 - US Environmental Policy 526-3 US Environmental Policy. This course investigates the US system of environmental regulation: the background of social and environmental movements that influence US policy and the agencies involved in US environmental regulation. Emphasis is on US regulations and US participation in global environmental policies. Overall, the focus is on spatial variations in environmental regulations; or the geography of environmental quality.

GEOG528 - GIS Portfolio/Capstone Project 528-3 GIS Portfolio/GIS Capstone Project. Independent development and implementation of a major GIS project based on analysis of spatially referenced data sets to produce digital products and to solve real world problems. Data obtained from multiple sources, including downloads from online sources, field collected data, and published map data. A project portfolio and a poster approved by the instructor must be submitted for successful completion. Prerequisite: GEOG 401 or GEOG 502 and GEOG 406 or GEOG 506, with a grade of C or higher, or consent of instructor. Lab fee: \$20.

GEOG529 - Sem Geog Local/Organic Food 529-3 Seminar: Geography of Local and Organic Food. A discussion of geographic topics in local and organic food and farming. This includes: spatial distributions, landscapes, policy influences, organic agricultural productivity, food safety, consumer concerns, organic farmers' decision making, organic marketing, local food systems, and organic certification. Restricted to graduate standing.

GEOG531 - Climate Data and Analysis 531-3 Climate Data and Analysis. This course focuses on identifying, locating, and applying appropriate climate data sets (e.g., station observations, atmospheric reanalyses, and climate model output), techniques for obtaining and processing these data sets, and methods commonly used for applied climate analysis. Student-lead, applied research projects provide students with the opportunity to utilize a variety of data sets and analytical tools introduced during the semester. The curriculum is organized around current practical problems from a variety of disciplines and identifying and analyzing appropriate data sets to address them. Students will become familiar with a range of computational packages, including Excel, SPSS, and Matlab. Students should have a basic understanding of climatology and statistics prior to taking this class.

GEOG533 - Adv Field Methods Geography 533-3 Advanced Field Methods in Geography. Quality geographic research depends on obtaining reliable data through an informed research design. Exploring both social and environmental processes, students will actively participate in developing and conducting investigations. Using the SIU Carbondale campus and surrounding region as a laboratory, lab exercises will include human geography, geomorphology, climatology and biogeography. Analytical techniques will include statistics and mapping. Lab fee: \$20.

GEOG534 - Water Resources Hydrology 534-3 Water Resources Hydrology. This course covers the major components of the hydrologic cycle with emphasis on surface water and fluvial (stream) processes. Students will gain a detailed understanding of the major hydrologic processes and develop substantial experience in collecting, compiling, and analyzing hydrologic data for use in water resource analysis and management.

GEOG536 - Natural Hazards 536-3 Natural Hazards. This course introduces students to the geophysical and human dimension of natural hazards and focuses on five main areas: 1) characterization of natural hazards; 2) human dimensions of natural hazards; 3) natural hazard risk assessment; 4) natural hazard mitigation planning; and 5) the use of geospatial tools and models used in risk assessments and mitigation planning activities. Students will develop a fundamental understanding of both geophysical and human dimensions of natural hazards and an awareness of how natural hazards can develop into disasters.

GEOG539 - Seminar Global Climate Change 539-3 Seminar on Global Climate Change. This course examines the major environmental, social and policy issues relevant to global climate change, including natural and anthropogenic causes, environmental pollution, land use/land cover change, extinction and biodiversity issues, and potential climate change-related impacts on human health. Restricted to graduate standing.

GEOG540 - Water Resources Management 540-3 Water Resources Management. This interdisciplinary course is taught in a hybrid lecture/seminar style. Students review the physical science, biological science, and environmental policy which underpin water resource management. In addition, students explore human impacts on water resources and the role that water management plays in striking a sustainable balance between needs of humans and aquatic ecosystems.

GEOG554 - Conservation and Environ 554-3 Conservation and Environmental Movements. Emphasizes the ways in which humans view and interact with the environment. Conservation literature

and the works of influential environmentalists are studied. Specific theories and environmental movements which help to explain society's current perception and use of the environment are studied.

GEOG556 - Geographic Visualization 556-3 Geographic Visualization. This course will provide an overview of geographic visualization with a concentration on theories, concepts and approaches of information visualization. Lectures and laboratory exercises will focus on the practical issues of exploratory data analysis (EDA), cartographic design process, web cartography, data quality and generalization, thematic mapping, map animation and multimedia applications. The course will provide students with a working knowledge of commercial software commonly used for graphic-based applications. Students are expected to utilize the hands-on experience gained from the lab exercises to further enhance their proficiency in graphic software. Two hours of seminar and classroom presentations, two hours of studio exercises each week. Lab fee: \$30.

GEOG570 - Contemp Issues Env Studies 570-3 Contemporary Issues in Environmental Studies. Background, current, and future issues linking social responses to scientifically relevant environmental issues. Students learn about the multiple geographic, social and ecological factors that influence environmental citizenship and participation. Topics include conservation/preservation, green jobs, environmental non-governmental organizations, policy influences, and environmental education. Lectures, guest lectures, and seminar style discussions. Students develop and demonstrate skills in problem solving, communication, and professionalism.

GEOG580 - Internship in Geography 580-3 Internship in Geography. Supervised field work in private or public organization dealing with environmental management or GIS. A report or professional poster on the work is required at the end of the semester. Special approval needed from the department.

GEOG591 - Independent Studies 591-2 to 4 Independent Studies in Geography. Restricted to graduate standing.

GEOG593A - Research Environ Sustain 593A-2 to 24 (2 to 6 per semester) Research in Environmental Sustainability. Restricted to graduate standing.

GEOG593B - Research GIS 593B-2 to 24 (2 to 6 per semester) Research in Geographic Information Science. Prerequisite: GEOG 500 and GEOG 501. Restricted to graduate standing.

GEOG593C - Research Climate & Water 593C-2 to 24 (2 to 6 per semester) Research in Climate & Water Resources. Restricted to graduate standing.

GEOG596 - Field Course 596-2 to 4 Field Course. Restricted to graduate standing.

GEOG599 - Thesis 599-2 to 6 Thesis. Restricted to graduate standing.

GEOG601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their thesis or research paper. The student must have completed the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF.

GEOG699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Geography and Environmental Resources Faculty

Baumann, Duane D., Professor, Emeritus, Ph.D., Clark University, 1968.

Duram, Leslie A., Professor, Ph.D., University of Colorado at Boulder, 1994.

Dziegielewski, Benedykt, Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1983.

Ford, Trenton W., Assistant Professor, Ph.D., Texas A&M University, 2015.

Horsley, Doc, Assistant Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1974.

Li, Ruopu, Assistant Professor, Ph.D., University of Nebraska, 2012.

Lieber, Stanley R., Professor, Emeritus, Ph.D., University of Iowa, 1974.

Perk, H. F. W., Lecturer, Emeritus, A.B., University of California at Los Angeles, 1951.

Remo, Jonathan, Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2008.
Schoof, Justin, Professor and Chair, Ph.D., Indiana University, 2004.
Sharpe, David M., Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1968.
Wagner, Audrey, Lecturer, M.S., Southern Illinois University, 2009.
Wang, Guangxing, Professor, Ph.D., University of Helsinki, Finland, 1996.
Weinert, Julie, Senior Instructor, Ph.D., Ohio State University, 2008.

Geology

Geology is the study of the Earth and encompasses a broad range of topics including Earth's history, composition, physical and chemical processes and the evolution of life. It has a unique perspective of time and scale, extending billions of years in the past and to global-wide events. Because of man's interaction with many Earth systems, geology is an environmental science that is vital to the resolution of such problems as climate change; groundwater supply and pollution; prediction and mitigation of earthquake, flooding and volcanic hazards; and natural resource discovery and utilization. Students majoring in geology acquire knowledge of value to many science and non-science professions.

The geology degree programs consist of a set of core courses that provide a foundation of geological principles and specialization tracks and elective courses that students choose to design a curriculum relevant to their interests. Many courses have a laboratory component where a hands-on, practical problem-solving approach to learning is emphasized. Students are introduced to basic and specialized computer programs and instrumental techniques used to gather and interpret data. Field trips to geological sites or field-based projects are regular features of several courses. Most classes for geology majors are small enough for students to receive individual attention and enjoy close contact with faculty in the classroom.

In the field of geology a student may work toward either a Bachelor of Arts or Bachelor of Science degree.

The Bachelor of Arts degree requires a major in geology but is a flexible program, permitting a student to combine education in geology with courses in other areas, such as other sciences, management or pre-law. A minor is optional. Having obtained a Bachelor of Arts degree, students may continue their education toward a Master of Science degree in geology.

The Bachelor of Science degree requires a core of Geology courses and courses in biology, chemistry, mathematics, physics and science electives. This degree requires a specialization to be obtained in one of the following: Geology, Environmental Geology, Geophysics, or Resource Geology. The specializations allow students to pursue specific career goals in the field of geology and related areas. The summer field course, usually taken between the junior and senior years, is part of the geology core. It is taught at a permanent field camp in the Beartooth Mountains near Red Lodge, Montana. Students desiring to do graduate work or to become a professional geologist will ordinarily pursue the Bachelor of Science degree.

Bachelor of Arts Degree in Geology, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Science Academic Requirements	10-12
Biological Sciences - (3 hours included in the UCC Life Science hours)	3
MATH 106 or MATH 108 and MATH 109; or MATH 111 (3 hours included in the UCC Mathematics hours)	1-3

Degree Requirements	Credit Hours
Physical Sciences-Completed with major Supportive Skills - CS 200B or CS 201 or CS 202 or ENGR 222, ENGL 290, ENGL 291 or ENGL 491, MATH 282; or 2 semester sequence of a foreign language	6
Geology Major Requirements	38-41
GEOL 220 or GEOL 222, GEOL 221, GEOL 223, GEOL 224, GEOL 302, GEOL 310, GEOL 315, GEOL 325 (3 hours included in the UCC Physical Science hours)	21
GEOL 450 or GEOL 454	3-6
CHEM 200 or CHEM 200H, CHEM 201, CHEM 202 or CHEM 202H, CHEM 210, CHEM 211, CHEM 212	10
PHYS 203A, PHYS 253A	4
Free Electives	28-31
Total	120

Bachelor of Science Degree in Geology, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Science Academic Requirements	10-12
Biological Sciences - (3 hours included in the UCC Life Science hours)	3
MATH 106 or MATH 108 and MATH 109; or MATH 111 3 hours included in the UCC Mathematics hours	1-3
Physical Sciences-completed with the major Supportive Skills - CS 200B or CS 201 or CS 202 or ENGR 222, ENGL 290, ENGL 291 or ENGL 491, MATH 282; or 2 semester sequence of a foreign language	6
Requirements for Major in Geology	58-59
GEOL 220 or GEOL 222; GEOL 221, GEOL 223, GEOL 224, GEOL 302, GEOL 310, GEOL 315, GEOL 325, GEOL 454 (3 hours included in the UCC Physical Science hours)	27
MATH 150	4

Degree Requirements	Credit Hours
CHEM 200 or CHEM 200H, CHEM 201, CHEM 202 or CHEM 202H, CHEM 210 or CHEM 210 H, CHEM 211, CHEM 212 or CHEM 212H	10
PHYS 203A, PHYS 253A, PHYS 203B, PHYS 253B	8
One of the following specializations	9-10
Geology Specialization - 9 hours of 400-level geology approved by the department advisor	9
Environmental Geology Specialization - Three courses from GEOL 418, GEOL 421, GEOL 470/GEOL 471, GEOL 474, GEOL 476, GEOL 478	9-10
Geophysics Specialization - Three courses from GEOL 435, GEOL 436, GEOL 437, GEOL 466	9
Resource Geology Specialization - Three Courses from GEOL 418, GEOL 419, GEOL 420, GEOL 421, GEOL 480, GEOL 482	9
Electives in Geology, Science, Mathematics or Technology	10-13
Total	120

Geology Minor

A minor consists of 16 hours, determined by consultation with the geology advisor.

Geology Honors Program

Students admitted to the University Honors Program (UHP) and majoring in Geology may participate in the Geology Honors Program. This program offers students more challenging course options and helps them better develop their skills in the geological sciences. Students in the Geology Honors Program must complete at least three honors courses which have special assignments arranged with the course instructor. Honors students are also encouraged to complete an Honors thesis with a member of the Department of Geology faculty. The UHP requirements are found at: honors.siu.edu.

Geology Courses

GEOL111 - Geology and the Environment 111-2 Geology and the Environment. (University Core Curriculum Course) [IAI Course: P1 908] Examines human interaction with geologic processes and hazards, including earthquakes, volcanoes, landslides and flooding; occurrences and availability of geologic resources, such as energy, water and minerals; and human impacts on the environment including global warming, waste disposal, and pollution. Two lectures per week. Must be taken concurrently with or upon completion of Geology 112 or 113. If Geology 111 is dropped the laboratory course must also be dropped.

GEOL112 - Geology Environment Lab 112-1 Geology and the Environment Laboratory Learning. (University Core Curriculum) [IAI course: P1 908L] Laboratory to accompany Geology 111. Hands-

on and inquiry-based learning in topics such as earth materials, topographic maps, stream dynamics, floods, coastal processes, landslides, groundwater, earthquakes, volcanoes, and human impacts on the environment. One laboratory session per week. Must be taken concurrently with or upon completion of Geology 111. Lab fee: \$10.

GEOL113 - Field Geology 113-1 Field Geology of Southern Illinois and Vicinity. (Advanced University Core Curriculum Course) Class will highlight the geological history and geological processes that have shaped southern Illinois and its surroundings, using the field as a natural laboratory. Schedule will include up to 7 Saturday field trips to nearby parks and outcrops, with a possible weekend trip outside of Illinois. Prerequisite: This class must be taken concurrently or following completion of GEOL 111, 220, 221, or 222. If GEOL 111, 220, 221, or 222 are dropped, then GEOL 113 must also be dropped. Activities fee: \$150.

GEOL121 - The History of the Earth 121-2 The History of the Earth. (University Core Curriculum Course) Geological processes shape the surface of our planet over millions of years. These forces provide the ever changing conditions for life. Fossils are "footprints" in time which recorded those changes, giving us the opportunity to unravel Earth's past. This class will study the story of Earth's geological and evolutionary past events. Two lectures per week. Must be taken concurrently with or upon completion of GEOL 124 or GEOL 113. If GEOL 124 or GEOL 113 is dropped then GEOL 121 must be dropped.

GEOL122 - Hazards and Catastrophes 122-2 Natural Hazards and Catastrophes. (University Core Curriculum Course) The Earth is shaped by dynamic geological forces such as earthquakes, volcanoes, and floods. While these phenomena construct the landscapes around us, they can be extremely destructive when in contact with human civilization and/or infrastructure. This class examines the natural forces capable of catastrophic impact on society providing a greater understanding of the sometimes violent geologic processes that shape the planet along with their human impact. Two lectures per week. Must be taken concurrently with or upon completion of GEOL 123 or GEOL 113. If GEOL 123 or GEOL 113 is dropped then GEOL 122 must be dropped.

GEOL123 - Hazards Lab 123-1 Natural Hazards and Catastrophes Laboratory. (University Core Curriculum Course) Laboratory to accompany GEOL 122. This lab examines natural processes associated with hazard and catastrophe in human history and modern society, such as earthquakes, volcanoes, landslides, and floods. Labs provide a greater understanding of the processes and driving forces shaping the planet along with their human impact while fostering skills of scientific inquiry. One laboratory session per week. Must be taken concurrently with or upon completion of GEOL 122. If GEOL 123 is dropped then GEOL 122 must be dropped. \$10 Lab Fee.

GEOL124 - History of the Earth Lab 124-1 History of the Earth Laboratory. (University Core Curriculum Course) Laboratory to accompany GEOL 121. Inquiry based laboratory sessions teaching the concepts of deep time, plate tectonics, evolution and the fossil record, biostratigraphy, rise and fall of the dinosaurs, evolution of mammals and humans. One laboratory session per week. Must be taken concurrently with or upon completion of GEOL 121. If GEOL 124 is dropped then GEOL 121 must be dropped. \$10 Field Trip Fee.

GEOL128 - The Dinosaurian World 128-2 The Dinosaurian World. (University Core Curriculum Course) An introduction to Dinosaurs and the world in which they lived, and died. Topics will include Mesozoic continents; Plants of the Mesozoic; Dinosaur paleoenvironments; Dinosaur origins; Dinosaur biology; Dinosaur fossilization; Dinosaur hunters and Dinosaur extinction. Must be taken concurrently with or upon completion of GEOL 129 or GEOL 113. If GEOL 129 or GEOL 113 is dropped then GEOL 128 must be dropped.

GEOL129 - DinoLab 129-1 DinoLab. (University Core Curriculum Course) A physical science lab that provides hands-on and inquiry based learning in geologic concepts necessary to fully understand dinosaur paleontology and paleobiology. Must be taken concurrently with or upon completion of GEOL 128, The Dinosaurian World. If GEOL 128 is dropped then GEOL 129 must be dropped. \$10 Lab Fee.

GEOL130 - The Planets 130-2 The Planets. (University Core Curriculum) This course provides a general overview of the origin of the solar system, the composition of the planets and moons of the solar system, and the search for other planetary systems and life in the universe. The planetary processes of meteorite impact, volcanism, tectonics, and weathering on the various planets and the newest discoveries

by NASA and other Space Agencies will be discussed. Planetary exploration efforts center on the search for life itself-"extant" life that is either active today or is dormant but still alive will be examined and compared across the solar system. Examines the methods of discovering information about the solar system involving the interdisciplinary application of pertinent basic scientific concepts of geology, chemistry, biology, meteorology, and cosmology. Two lectures per week. Must be taken concurrently or upon completion of laboratory course GEOL 131. If GEOL 131 is dropped then the GEOL 131 must be dropped.

GEOL131 - Planets Lab 131-1 The Planets Laboratory Learning. (University Core Curriculum) Laboratory to accompany GEOL 130. This lab will provide hands on inquiry-based learning in topics such as building materials of planets and their moons, meteorites and their origin and composition, volcanoes and plate movement, the internal structure and the atmospheric composition of planetary bodies across the solar system, the sun-earth interactions, the impacts and their effects on planetary development, and the search for "extant" life that is either active today or is dormant but still alive across the solar system. One laboratory session per week. Must be taken concurrently with Geology 130.

GEOL220 - The Dynamic Earth 220-3 The Dynamic Earth. (Advanced University Core Curriculum Course) [IAI Course: P1 907] Introduction to the materials which form the Earth and the dynamic processes that change them. Three lectures per week. With 223 satisfies University Core Curriculum Science Group I requirement in lieu of 111 and 112. Field trip required. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field Trip Fee not to exceed \$25.

GEOL220H - The Dynamic Earth 220H-3 The Dynamic Earth. (University Honors Course) (Advanced University Core Curriculum Course) [IAI Course: P1 907] Introduction to the materials which form the Earth and the dynamic processes that change them. Three lectures per week. With 223 satisfies University Core Curriculum Science Group I requirement in lieu of 111 and 112. Field trip required. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field Trip Fee not to exceed \$25. Restricted to University Honors Program students.

GEOL221 - Earth Through Time 221-3 Earth Through Time. (Advanced University Core Curriculum Course) [IAI Course: P1 907] Concepts and methods of interpreting earth history. Development of earth's major features and environment systems. Emphasis on ancient environments and life forms, major changes in paleoclimate, paleocommunities and biodiversity. Students must complete a research project. With 224 satisfies University Core Curriculum Group I Science requirement in lieu of Geology 111 and 112. Field trips required. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field Trip Fee not to exceed \$15.

GEOL221H - Earth Through Time 221H-3 Earth Through Time. (University Honors Course) (Advanced University Core Curriculum Course) [IAI Course: P1 907] Concepts and methods of interpreting earth history. Development of earth's major features and environment systems. Emphasis on ancient environments and life forms, major changes in paleoclimate, paleocommunities and biodiversity. Students must complete a research project. With 224 satisfies University Core Curriculum Group I Science requirement in lieu of Geology 111 and 112. Field trips required. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field Trip Fee not to exceed \$15. Restricted to University Honors Program students.

GEOL222 - Environmental Geology 222-3 Environmental Geology. (Advanced University Core Curriculum course) A study of the environment from a geological perspective. A critical study of geological hazards (earthquakes, floods), earth resources (minerals, water), proper land use (waste disposal), and other environmental concerns. Three lectures per week. One Saturday field trip required. Prerequisite: with 223 satisfies University Core Curriculum Science Group I requirement in lieu of 111 and 112. Lab fee: \$5.

GEOL223 - Intro Geology Lab 223-1 Introductory Geology Laboratory. (Advanced University Core Curriculum Course) Understanding the earth's processes, materials and environment through hands-on laboratory and field experience. One three-hour session per week. Prerequisite: completion of, or concurrent enrollment in, 220 or 222, with 220 or 222 satisfies University Core Curriculum Science Group I requirement in lieu of 111 and 112. Lab fee: \$10.

GEOL224 - Earth Through Time Laboratory 224-1 Earth Through Time Laboratory. (Advanced University Core Curriculum Course) Concepts and methods of interpreting earth's history. One two-hour laboratory per week. Weekend day field trip required. Prerequisite: completion of or concurrent enrollment in 221. With 221 satisfies University Core Curriculum Group I Science requirement in lieu of Geology 111 and 112. Lab fee: \$10.

GEOL302 - Structural Geology 302-4 Fundamentals of Structural Geology. An introduction to structural geology including a study of the forces involved in the deformation of the earth's crust, with special emphasis on the recognition and interpretation of the resultant geologic features. Laboratory required. Up to 3 one- or two-day field trips may be required on weekends. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Prerequisite: GEOL 220 or 222 with a grade of C or better; 223 with a grade of C or better; MATH 109 or 111. Recommended: Physics 203 or 205, or concurrent enrollment. Field trip fee not to exceed \$199.

GEOL302H - Structural Geology 302H-4 Fundamentals of Structural Geology. (University Honors Course) An introduction to structural geology including a study of the forces involved in the deformation of the earth's crust, with special emphasis on the recognition and interpretation of the resultant geologic features. Laboratory required. Up to 3 one- or two-day field trips may be required on weekends. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$199. Prerequisite: GEOL 220 or 222 with a grade of C or better; 223 with a grade of C or better; MATH 109 or 111. Recommended: Physics 203 or 205, or concurrent enrollment. Restricted to University Honors Program students.

GEOL310 - Mineralogy 310-4 Mineralogy. Introduction to the internal structure morphology and chemistry of crystals. Study of the properties, chemistry, occurrence and identification of rock-forming and economically important minerals. Rudiments of the use of a petrographic microscope and the optical properties of common rock-forming minerals. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: GEOL 220 or 222 with a grade of C or better; 223 with a grade of C or better; CHEM 200, 201 recommended. Lab fee: \$15.

GEOL315 - Petrology 315-4 Petrology. Introduction to the classification, nature, origin and processes of igneous, sedimentary and metamorphic rocks. Hand specimen and thin-section analysis of rocks. Lecture-laboratory. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: GEOL 310 with a grade of C or better. Lab fee: \$15.

GEOL315H - Petrology 315H-4 Petrology. (University Honors Course) Introduction to the classification, nature, origin and processes of igneous, sedimentary and metamorphic rocks. Hand specimen and thin-section analysis of rocks. Lecture-laboratory. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: GEOL 310 with a grade of C or better. Lab fee: \$15. Restricted to University Honors Program students.

GEOL325 - Sedimentology & Stratigraphy 325-4 Sedimentology and Stratigraphy. An overview of the relationship between tectonics and climate, and the origin of sedimentary rocks; the course outlines: the plate-tectonics setting of sedimentary basins, their geometry, and subsidence mechanisms; the relationship between sediment supply, basin subsidence, and global sea-level change in determining the sequence stratigraphy of sedimentary-basin fill; and principles of interpretation of environment of deposition within a sequence stratigraphic framework. Prerequisite: GEOL 220 or 222 with a grade of C or better, 221 with a grade of C or better, 223 with a grade of C or better, 224 with a grade of C or better. Lab and field trips required. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$60.

GEOL327I - The World's Oceans 327I-3 The World's Oceans. (University Core Curriculum: Students with a catalog year prior to Summer, 2012 only) The world's ocean comprises up to 80% of the earth's surface. It plays a significant role in global climate, contains mineral resources and harbors a wealth of plant and animal life. "The World's Oceans", through the scientific method, will provide a greater understanding of the processes and components of the oceans and their importance to our everyday life. The course will include lectures, discussion sessions, readings and exercises from the text, laboratory exercises and short field excursions.

GEOL329H - Geomythology 329H-3 Geomythology. (University Core Curriculum Course) (University Honors Course) Natural disasters have been the source of countless myths and legends throughout

human history. This course will examine ways in which regional geology influenced ancient civilizations, and explore the possibility that some of their myths and legends preserve a record of actual geologic events. This class will include lectures, discussions, media sources and readings. An introductory geology course is recommended but not necessary. Prerequisite: GEOL 111, 220, 221 or 222 recommended. Restricted to University Honors Program students.

GEOL329I - Geomythology 329I-3 Geomythology. (University Core Curriculum Course) Natural disasters have been the source of countless myths and legends throughout human history. This course will examine ways in which regional geology influenced ancient civilizations, and explore the possibility that some of their myths and legends preserve a record of actual geologic events. This class will include lectures, discussions, media sources and readings. An introductory geology course is recommended but not necessary. Prerequisite: GEOL 111, 220, 221 or 222 recommended.

GEOL330H - The Planets 330H-3 The Planets. (University Honors Course) (University Core Curriculum: Students with a catalog year prior to Summer 2012 only) The geology of the planets and moons of the solar system, their origin and history, the origin of the universe and the solar system and the search for other planetary systems and life in the universe. The geologic processes of vulcanism, tectonism, weathering and meteorite impact on the various planets will be examined and compared. A main focus of the course will be examining the methods for discovering information about the solar system involving the interdisciplinary application of pertinent basic scientific concepts of geology, geochemistry, geophysics, meteorology and cosmology. Restricted to University Honors Program students.

GEOL330I - The Planets 330I-3 The Planets. (University Core Curriculum: Students with a catalog year prior to Summer 2012 only) The geology of the planets and moons of the solar system, their origin and history, the origin of the universe and the solar system and the search for other planetary systems and life in the universe. The geologic processes of vulcanism, tectonism, weathering and meteorite impact on the various planets will be examined and compared. A main focus of the course will be examining the methods for discovering information about the solar system involving the interdisciplinary application of pertinent basic scientific concepts of geology, geochemistry, geophysics, meteorology and cosmology.

GEOL401 - Phys Earth for Teachers 401-3 Physical Nature of the Earth for Teachers. This is an on-line course that offers an overview of the materials that form the Earth and the dynamic processes that shape the Earth, including both surficial processes and plate tectonics. This course will cover content appropriate for science teachers preparing to teach Physical Geology as a Dual-Credit course in high schools. Topics include: components and processes that create rocks and the cycles that change one rock into another; how plate tectonics has shaped the Earth; surficial processes (weathering, landslides, movement of ice, water, and wind); hazardous processes (earthquakes, volcanoes, flooding); and resources such as water, soil, and mineral and energy sources. This course is designed to be taken in conjunction with GEOL 402, a 1-hr laboratory course. Only open to students in the Dual Credit Certificate for Teachers program.

GEOL402 - Phys Earth Lab Teachers 402-1 Physical Nature of the Earth Laboratory for Teachers. Through active learning activities, this course offers examination of the materials that form the Earth and the dynamic processes that shape the earth, including surficial processes and plate tectonics. This course will cover content appropriate for science teachers preparing to teach labs associated with Physical Geology as a Dual-Credit course in high schools. This is offered as a hybrid distance education (on-line) class and includes both at-home and in-class laboratory assignments. For the in-class components, students will come to SIUC's campus for 2 half days (Saturdays) as indicated in the schedule. This course is designed to be taken in conjunction with GEOL 401, a 3-hr online course in which the students learn about earth materials and earth processes in greater depths. Only open to students in the Dual Credit Certificate for Teachers program.

GEOL403 - Hist Geol Teacher Enhancement 403-3 Historical Geology Teacher Enhancement. GEOL 403 is an online course designed to train science teachers to teach Historical Geology as a Dual Credit course in high schools. This course covers the basic principles involved in the study of geology and the history of the Earth preserved in the rock record. We begin with the large-scale components of Earth systems and geologic time, and then learn about the evolution of life recorded in the fossil record from the earliest life through the present. This course covers not just WHAT we know, but how we know it. This course is designed to be taken in conjunction with GEOL 404, a 1-hr laboratory course. Only open to students in the Dual Credit Certificate for Teachers program.

GEOL404 - Hist Geol Teacher Enhance Lab 404-1 Historical Geology Teacher Enhancement Lab. GEOL 404 is the laboratory section that accompanies the online Historical Geology Teacher Enhancement. This laboratory course offers hands-on activities to complement the online lectures and will provide teachers with a structure to teach labs in their own Dual Credit high school courses. This course covers the basic principles involved in the study of geology and the history of the Earth preserved in the rock record. We study sedimentary rocks, and learn how to read the clues to past environments and life preserved within samples. This course is done partially at home, but requires a six hour in house lab session. Only open to students in the Dual Credit Certificate for Teachers program.

GEOL405 - Science Writing 405-2 Science Writing and Scientific Communication. Course will teach "survival skills" in scientific reading, writing, communicating, and publishing for new graduate students. Topics will include database search, analysis of journal articles, abstracts, figures, and tables, Powerpoint presentations, proposals, posters, thesis writing, and preparation of journal submissions. Enrollment is open to graduate students in the sciences and is by permission of the instructor.

GEOL411 - Volcanology 411-3 Volcanology. Study of volcanoes, their distribution, forms, composition, eruptive products and styles of potential hazards. Relationship of magmatic characteristic, eruptive style, and depositional products to the geologic framework is examined. Prerequisite: GEOL 315.

GEOL412 - Advanced Petrology 412-3 Advanced Petrology. In-depth study of the rock forming processes. The relations of rock forming processes to petrographic analysis will be emphasized. Laboratories will deal with hand-specimen and thin-section analysis from selected rock suites with genetic modeling of the resulting data. Prerequisite: GEOL 310, 315.

GEOL413 - Quantitative Methods-Geology 413-3 Quantitative Methods of Geology. An introduction to quantitative methods in a geological and earth sciences context. Topics introduced include sampling plans for geologic studies, non-parametric test of geological data, comparisons of geological samples, analysis of sequential geological data. Laboratories will deal with numerical examples from all areas of geology. Restricted to advanced standing. Special approval needed from the instructor.

GEOL415 - Optical Mineralogy 415-3 Optical Mineralogy. The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Lecture, laboratory. Prerequisite: GEOL 310, PHYS 203B or 205B.

GEOL416 - Geochem Natural Waters 416-3 The Geochemistry of Natural Waters. The purpose of this class is to provide students with a strong theoretical background in aqueous geochemistry, environmental geochemistry, and groundwater geochemistry for application in a wide range of research topics. The approach combines conceptual knowledge with quantitative skills in a cyclic fashion to build independent understanding and chemical intuition. Prerequisites: GEOL 310, CHEM 200, 201, 210, 211 or consent of instructor. Lab fee: \$15.

GEOL417 - Isotope Geochemistry 417-3 Isotope Geochemistry. Isotope fractionation in natural systems containing D/H, carbon, oxygen, nitrogen, and sulfur. Application of stable isotope studies to environmental processes, paleoclimatology, and geothermometry. Stable and radioactive isotopes as tracers in hydrologic processes, ore deposits, sedimentology, and in crust-mantle differentiation processes. Prerequisite: GEOL 310, CHEM 200, 201, 210, 211, or equivalent.

GEOL418 - Low Temp Geochemistry 418-3 Low Temperature Geochemistry. The application of chemical principles to geologic processes that occur on and near the earth's surface. Lecture, laboratory. Prerequisite: GEOL 310, CHEM 200, 201, 210, 211 or equivalent.

GEOL419 - Ore Deposits 419-3 Ore Deposits. Overview of the occurrence, geology and origin of metalliferous mineral deposits. Geologic principles and research techniques important to the understanding of mineral deposits. Introduction to exploration and mining methods. Lectures, laboratories and field trips required. Prerequisite: GEOL 302, 315 or consent of instructor. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$60.

GEOL420 - Petroleum Geology 420-3 Petroleum Geology. The geological occurrences of petroleum including origin, migration and accumulation; a survey of exploration methods, and production problems

and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum and natural gas. Prerequisite: GEOL 221, 224.

GEOL421 - Organic Geochemistry 421-3 Organic Geochemistry. The nature, origin and fate of natural and artificial organic materials in rocks and sediments. Topics include characterization of fossil fuels using biological marker compounds, petroleum source rock evaluation, and organic pollutants in the environment. Prerequisite: GEOL 325 or consent of instructor.

GEOL423 - Geomicrobiology 423-3 Geomicrobiology. (Same as MICR 423 and MBMB 423) The course will focus on the role that microorganisms play in fundamental geological processes. Topics will include an outline of the present understanding of microbial involvement of weathering of rocks, formation and transformation of soils and sediments, and genesis and degradation of minerals. Elemental cycles will also be covered with emphasis on the interrelationships between the various geochemical cycles and the microbial trophic groups involved. Prerequisite: Microbiology 301 and Chemistry 210 and 211. Recommended: GEOL 220, 221 or 222.

GEOL425 - Invertebrate Paleo & Paleoecol 425-3 Invertebrate Paleontology and Paleoecology. (Same as ZOOL 425) Concepts of paleontology and paleoecology. Emphasis on functional morphology, lifestyles and habitats of fossil invertebrates and algae. The nature and evolution of marine and coastal paleocommunities. The effects of extinction events on paleocommunities and biodiversity. Laboratory. Field trips required. Prerequisite: GEOL 325 or a biology course. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$199.

GEOL428 - Paleoecology & Envrns Depstn 428-3 Paleoecology and Environments of Deposition. Characteristics, distribution, and classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentological and paleoecological approaches. Recognition of ancient environments and environmental associations. Laboratory. Field trips required. Prerequisite: GEOL 425, 325, or concurrent enrollment. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$199.

GEOL430 - Planetary Geology 430-3 Planetary Geology. Study of the solar system and planet formation, focusing on formation, differentiation and secondary processes. Geologic histories and geological processes of other planets are examined and compared with our understanding of the Earth. Prerequisite: GEOL 310.

GEOL435 - Solid-Earth Geophysics 435-3 Solid-Earth Geophysics. Earth's size, shape, mass, age, composition, and internal structure are reviewed in detail as understood from its volcanism, gravity and magnetic fields, seismicity, and motion of continents and ocean basins; plate tectonics. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: GEOL 302, MATH 150, or consent of instructor.

GEOL436 - Applied Geophysics 436-3 Applied Geophysics. Theory and practice of geophysics applied to exploration for natural resources including oil, minerals, coal, groundwater, and for archaeology, environmental, and meteorite impact sites and earthquake zones. Methods include seismic reflection, refraction, and surface waves also gravity, magnetic, and electrical. Up to 3 one-day field trips may be conducted on weekends. Recommend: GEOL 220 or 222, PHYS 203A/B or PHYS 253A/B. Prerequisite: MATH 150. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$80.

GEOL437 - Field Course in Geophysics 437-3 Field Course in Geophysics. Use of geophysical equipment for collection, analysis and interpretation of seismic, gravity, magnetic, electrical, and other types of geophysical data. Field trips required. Prerequisite: GEOL 436 or consent. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$199.

GEOL440 - Adv Topics Geological Sciences 440-1 to 8 Advanced Topics in the Geological Sciences. Individual study or research or advanced studies in various topics. Restricted to advanced standing. Special approval needed from the instructor.

GEOL445 - Museum Studies in Geology 445-3 Museum Studies in Geology. History, nature and purpose of geology in museums, relationships of geology to other museum disciplines, application of geologic methods to museum functions, preparation and preservation of specimens; nature, acquisition and utilization of geologic collections in museums; role of research in museums.

GEOL450 - Intro to Field Geology 450-3 Introduction to Field Geology. Introduction to field techniques, principles of geologic mapping and map interpretation. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Prerequisite: GEOL 310 with a grade of C or better.

GEOL451 - Field Experience in Geology 451-1 to 12 Field Experience in Geology. Preparation for and participation in academically rigorous field trips guided by faculty members. Trips will be to areas of geological interest and will occur during official breaks within or between semesters. Expense will vary in proportion to the distance traveled and duration of trip and will be determined before each trip. A student may only take a specific trip once for credit. Special approval needed from the instructor.

GEOL454 - Field Geology 454-6 Field Geology. Advanced field mapping in the Rocky Mountains, including problems in stratigraphy, structure, petrology, paleontology, geomorphology, and economic geology. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Prerequisite: GEOL 302, 315, 325. GEOL 450 recommended. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$1,000.

GEOL466 - Tectonics 466-3 Tectonics. Fundamentals of geodynamics applied to plate tectonics: mantle composition and rheology, deformation of the lithosphere, structural characteristics of plate margins, stability of triple junctions, diachronous tectonics, and orogenesis will be examined in detail. One 3-day field trip is required. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$150. Prerequisite: GEOL 302, MATH 150, or consent.

GEOL466H - Tectonics 466H-3 Tectonics. (University Honors Course) Fundamentals of geodynamics applied to plate tectonics: mantle composition and rheology, deformation of the lithosphere, structural characteristics of plate margins, stability of triple junctions, diachronous tectonics, and orogenesis will be examined in detail. One 3-day field trip is required. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$150. Prerequisite: GEOL 302, MATH 150, or consent. Restricted to University Honors Program students.

GEOL470 - Hydrogeology 470-3 Hydrogeology. Study of the distribution, origin, and movement of groundwater, and the properties of geologic materials that control groundwater flow and contaminant transport. Geology majors must also take GEOL 471 concurrently. Prerequisite: GEOL 220 or 222; or consent of instructor.

GEOL471 - Hydrogeology Lab 471-1 Hydrogeology Laboratory. Problem sets, laboratory experiments, and field exercises in hydrogeology. Majors must take concurrently with GEOL 470. Field trips required. Prerequisite: GEOL 220 or 222; or consent of instructor. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$150.

GEOL474 - Geomorphology 474-3 Geomorphology. Study of erosional and depositional processes operating at the earth's surface and landforms resulting from these processes. Relationship of processes and landforms to the geologic framework is examined. Laboratory. Field trips required. Prerequisite: GEOL 220 or 222; 223. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$60.

GEOL476 - Quaternary Geology 476-3 Quaternary Geology. Methods used to identify, map, date and correlate Quaternary deposits and interpret Quaternary history. Covers glacial, fluvial, coastal, lacustrine and eolian chronologies, oxygen-isotope records from ocean sediments and continental ice cores, volcanic activity, and Quaternary climate change. Field trips required. Prerequisite: GEOL 220 or 222; 221, 223, 224; or consent of instructor; GEOL 474 recommended.

GEOL480 - Geology of Coal 480-3 Geology of Coal. Stratigraphy, sedimentation and structure of coal deposits; modern analogs; origin of splits and partings in coal seams; coal quality and rank; coal exploration and mining; methods of resource evaluation. Prerequisite: GEOL 220 or 222; 221, 223, and 224; or consent of instructor.

GEOL481 - Sedimentary Basin Analysis 481-3 Sedimentary Basin Analysis. The use of stratigraphy, structure, sedimentology and geophysics to determine the paleogeographic evolution of sedimentary basins. Topics include the study of the relationships between host strata and both primary and post-depositional non-renewable resources, plate tectonics and basin evolution and subsurface geologic methods. Special approval needed from the instructor. Lab fee: \$10.

GEOL482 - Organic Petrology 482-3 Organic Petrology. Petrology and geochemistry of coals and dispersed organics; emphasis on applications to the coal and oil industries; origin of coal and source rock constituents; geochemical and petrographic changes with increased maturation. Prerequisite: GEOL 220 or 222; 221, 223, and 224; or consent of instructor. Lab fee: \$50.

GEOL483 - Forensic Geology 483-3 Forensic Geology. An introduction to the use of geological materials and techniques in criminal investigation. Details from actual criminal cases will be used as examples in all the topics covered which include rock and mineral types, geological and topographic maps, fossils, sand, soils, spores and pollen, geological building materials, art fraud and gemstones. Techniques covered will include optical microscopy, scanning electron microscopy and x-ray diffraction. Lab fee: \$10.

GEOL484 - Geologic Remote Sensing 484-3 Geologic Remote Sensing. Applications of remote sensing using aerial photographs, multi-spectral imagery, hyperspectral imagery, thermal infrared imagery, and radar imagery, in structural geology, stratigraphy, geomorphology, oil and mineral exploration, geologic hazard analysis and planetary exploration. Prerequisite: GEOL 220 or consent of the instructor. Lab fee: \$25.

GEOL490 - Internship 490-1 to 3 Internship. Credit for supervised practical experience with an external geological agency or company; prior approval of the sponsoring agency and the department is required. Restricted to advanced standing.

GEOL500 - Teaching:Geol Grad Student 500-1 to 2 Teaching for Geology Graduate Students. To help teaching assistants develop skills in conducting laboratory work and leading discussions. One hour required for all teaching assistants in geology. Graded S/U only.

GEOL510 - Advanced Sedimentology 510-2 Advanced Sedimentology. Basic principles of field observation, field and laboratory sampling, and data analysis of clastic sedimentary rocks; introduction to laboratory techniques; introduction to statistical, physical and empirical models in sedimentary geology. Field trips required. Prerequisite: GEOL 325 or GEOL 474.

GEOL513 - Quantitative Methods Earth Sci 513-3 Quantitative Methods in the Earth Sciences. An introduction to quantitative methods in an Earth Sciences context. Topics include sampling plans for geologic studies, non-parametric tests of geological data, comparisons of geological samples, analysis of sequential geological data. Course will deal with numerical examples from different areas of geology. Special approval needed from the instructor.

GEOL515 - Instrumental Analysis 515-3 Instrumental Analysis in Geology. An introduction to modern methods of instrumental inorganic geochemical analysis that are particularly important in the geology sciences. This includes both operational theory and practical application of methods for the analysis of minerals, rocks and aqueous solutions. Lecture, laboratory. Prerequisite: GEOL 310, CHEM 210 or equivalent; GEOL 418 recommended.

GEOL517 - Adv Topics: Geochemistry 517-2 to 9 (2 to 6 per semester) Advanced Topics in Geochemistry. Specialized topics in geochemistry. Topics covered might include thermodynamic modeling of mineral-solution equilibria, the role of kinetics in mineral-solution reactions, experimental hydrothermal geochemistry or other topics to be announced by the department. Maximum credit nine semester hours. Prerequisite: GEOL 418 or consent of instructor.

GEOL518 - Clay Mineralogy 518-3 Clay Mineralogy. Study of the structure, chemistry, origin, and geologic importance of clay minerals. Industrial and other applications of clays. Lecture, laboratory. Prerequisite: GEOL 310 or consent.

GEOL520 - Adv Topic:Igm/Metam Petrology 520-2 to 9 (2 to 6 per semester) Advanced Topics in Igneous and Metamorphic Petrology. Petrologic principles and their relationships and other selected topics to be announced by the department. Special approval needed from the instructor.

GEOL522 - Sed Petro:Siliciclastics 522-3 Sedimentary Petrology-Siliciclastics. The petrography and petrology of siliciclastic rocks, emphasizing sandstone. Microscopic studies of composition and components of detrital clastic rocks, their origin, provenance, characteristics, diagenesis, cementation and lithification. Special approval needed from the instructor.

GEOL523 - Sed Petro: Carbonates 523-3 Sedimentary Petrology-Carbonates. The origin, classification, diagenesis, and geochemistry of carbonate rocks, with emphasis on petrographic analysis. Study of recent carbonate depositional environments. Laboratory required. Prerequisite: GEOL 325; GEOL 418 recommended.

GEOL524 - Adv Topics in Sed Geology 524-2 to 9 (2 to 6 per semester) Advanced Topics in Sedimentary Geology. Topics may include clastic depositional environments, carbonate depositional environments; diagenesis of sedimentary rocks, and other topics to be announced by the department. Up to 3 one- or two-day field trips may be required on the weekends. Special approval needed from the instructor.

GEOL525 - Adv Topics:Invert Paleon 525-2 to 6 (2 to 3 per semester) Advanced Topics in Invertebrate Paleontology. Lectures, readings, field and laboratory studies, including techniques and quantitative methods of study. Preparation for research in paleontology. Topics may include corals, bryozoans, brachiopods, mollusks, echinoderms, biostratigraphy, tempo and mode of invertebrate evolution and other topics to be announced by the department. Maximum credit six semester hours. Prerequisite: GEOL 425 or consent of instructor.

GEOL526 - Adv Topics:Appld Paleoecology 526-3 Advanced Topics in Applied Paleoecology. Lectures, field, and laboratory studies, including techniques and quantitative methods. Preparation for research in paleoecology. Emphasis on using fossil marine invertebrates and trace fossils to interpret ancient sedimentary environments. Prerequisite: GEOL 428 or consent.

GEOL527 - MicroPaleontology 527-3 Micropaleontology. Structure, classification, paleoecology, stratigraphic distribution, and evolution of microfossils. Laboratory work in techniques of collection, preparation and study of microfossils. Identification and use of microfossils in solving stratigraphic and paleoenvironmental problems. Preparation for research in micropaleontology. Field trips required. Prerequisite: GEOL 425 or consent of instructor. Field trip fee: \$85.

GEOL535 - Adv Topics: Geophysics 535-1 to 9 (1 to 6 per semester) Advanced Topics in Geophysics. Specialized topics in geophysics. Examples include but are not limited to seismic stratigraphy, mid-continent seismicity, isostasy, data processing techniques. The topic to be covered is announced by the department. Maximum credit nine semester hours. Up to 3 one- or two-day field trips may be required on the weekends. Prerequisite: GEOL 435 or GEOL 436 or consent of instructor.

GEOL536 - Earthquake Seismology 536-3 Earthquake Seismology. Observational seismology. Topics include earthquake source mechanisms; propagation, reflection and refraction of elastic waves; ray theory; dispersion of surface waves; the effect of earth structure on the seismogram; and the seismograph. Research projects will be conducted using data from the SIU Geophysical Observatory. Up to 3 one- or two-day field trips may be required on the weekends. Prerequisite: GEOL 435 or GEOL 436, MATH 150 or consent of instructor.

GEOL537 - Applied Seismology 537-3 Applied Seismology. Study of the seismic reflection techniques, including theory and methods of collection and analysis of seismic reflection data, the seismic method, waveform analysis, and digital filtering with computer applications and seismic instrument characteristics. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: MATH 150 or consent.

GEOL550 - Adv Economic Geology 550-4 Advanced Economic Geology. In-depth examination of the geologic characteristics, classification and origin of metallic mineral deposits. Aspects of mineral exploration and mining techniques are also discussed. Laboratory exercises emphasize hand specimen and petrographic study of ore and host rock suites. Up to 3 one- or two-day field trips may be required on weekends.

GEOL555 - Adv Topics in Econ Geol 555-1 to 6 (1 to 3 per semester) Advanced Topics in Economic Geology. Advanced study in a specific area of economic geology to be determined by course participants. Course content may focus on a specific type of mineral deposit or such topical areas as field characteristics, mineral exploration techniques, stable isotope geochemistry, fluid inclusion studies and hydrothermal processes. Maximum six credit hours. Field trips may be required on up to 3 weekends and possibly over Spring vacation. Prerequisite: GEOL 550.

GEOL566 - Topics in Structural Geology 566-3 Advanced Topics in Structural Geology. Lectures, readings, and discussion of advanced aspects of rock deformation: dislocation theory and its applications to flow processes of rocks; experimental rock deformation; incremental and finite strain theory and analysis; and recent developments in structural geology. Special approval needed from the instructor.

GEOL570 - Adv Hydrogeology 570-3 Advanced Hydrogeology. A combination of lectures, seminars, and independent studies of advanced topics in hydrogeology, particularly geochemistry and the response of aquifers to stresses such as tides, recharge and saline intrusion. Prerequisite: GEOL 470.

GEOL577 - Adv Topics: Surficial Geology 577-2 to 9 (2 to 6 per semester) Advanced Topics in Surficial Geology. Studies of processes, landforms, and deposits in the surface or near surface geologic setting. Selected topics to be announced by the department. Maximum credit nine semester hours. Special approval needed from the instructor.

GEOL578 - Fluvial Geomorphology 578-3 Fluvial Geomorphology. Detailed study of fluvial processes and landforms within the context of major concepts in geology and geomorphology. Topics include drainage basins, hydro-climatology and surface water hydrology, channel processes, fluvial depositional systems, paleohydrology and changes in fluvial systems through time. Field trips required. Prerequisite: GEOL 474. Special approval needed from the instructor. Field trip fee: \$35.

GEOL582 - Adv Coal Petrology 582-1 to 6 (1 to 3 per semester) Advanced Coal Petrology. Microscopy, source materials, coalification, constitution, and classification of peats, lignites, bituminous coal, anthracite; applications to industrial problems. Prerequisite: GEOL 482. Lab fee: \$50.

GEOL584 - Adv Geol Remote Sensing 584-3 Advanced Geologic Remote Sensing. An advanced course covering the nature of electromagnetic radiation, the electromagnetic spectrum and the interaction between electromagnetic radiation and matter. Remote sensing systems will be presented and the fundamentals of digital image processing will be introduced from a theoretical and practical viewpoint. A series of case studies with applications ranging from mineral exploration to volcano monitoring will be covered. Field Trip Fee: \$40.

GEOL585 - Earth/Space Sci for Teachers 585-3 Earth and Space Science for Teachers. Class designed to help teachers gain an understanding of some of the earth science concepts they need to teach today's standards-based curricula. Develops an understanding of earth materials, how the earth works, earth resources, the causes of natural disasters, and the exploration of the bodies of our solar system. Prerequisites: A general physical science course or equivalent. Special approval needed from the department.

GEOL588 - Global Energy Resources 588-3 Global Energy Resources. Ready access to energy is essential to sustaining modern societies. This course will discuss the nature of the resources that have been, are, or potentially could be used to provide energy in the US and around the globe, including fossil fuels, nuclear energy resources, bioenergy resources and emerging energy resources such as geothermal, wind, tidal, and solar energy.

GEOL591 - Individual Research 591-1 to 6 Individual Research in Geology. Investigations in geology other than those for theses or dissertations.

GEOL599 - Thesis 599-1 to 6 Thesis (1 to 8 hours per semester). Research for and writing of the master's thesis. Maximum of six hours to be counted toward a Master's degree.

GEOL600 - Dissertation 600-1 to 30 (1 to 16 per semester) Dissertation. Research for and writing of the doctoral dissertation. Special approval needed from the instructor.

GEOL601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

GEOL699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Geology Faculty

Anderson, Ken B., Professor, Ph.D., University of Melbourne, Australia, 1989.

Conder, James A., Associate Professor, Ph.D., Brown University, 2001.

Crelling, John C., Professor, Emeritus, Ph.D., The Pennsylvania State University, 1973.

Esling, Steven Paul, Associate Professor and Chair, Ph.D., University of Iowa, 1984.

Ferre, Eric C., Professor, Ph.D., University of Toulouse, France, 1989.

Fifarek, Richard H., Associate Professor, Emeritus, Ph.D., Oregon State University, 1985.

Filiberto, Justin, Associate Professor, Ph.D., Stony Brook University, 2006.

Hummer, Daniel R., Assistant Professor, Ph.D., The Pennsylvania State University, 2010.

Ishman, Scott E., Professor, Ph.D., Ohio State University, 1990.

Lefticariu, Liliana, Associate Professor, Ph.D., Northern Illinois University, 2004.

Marzolf, John E., Associate Professor, Emeritus, Ph.D., University of California at Los Angeles, 1970.

Potter-McIntyre, Sally, Assistant Professor, Ph.D., University of Utah, 2013.

Rimmer, Sue, Professor, Ph.D., Pennsylvania State University, 1985.

Sexton, John L., Professor, Ph.D., Indiana University, 1974.

Health Care Management

The Health Care Management (HCM) major provides coursework and experience across the spectrum of health care supervision and management. Many Health Care Management graduates obtain supervisory and administrative positions in various health and medical facilities such as hospitals, nursing homes, public health departments, health insurance companies, or physician practices. Other graduates successfully complete graduate programs in a variety of business or health-related areas of study. The Bachelor of Science degree in Health Care Management accommodates beginning students as well as students who have professional preparation in health-oriented fields from colleges and universities, technical institutes, community colleges, proprietary institutions or military schools. Graduates of diploma programs also may be eligible for admission. Students in health care education build upon their background through a combination of major core courses, electives within HCM, approved electives and the SIU University Core. The HCM program is certified by the Association of University Programs in Health Administration (AUPHA).

Students in the major must meet with the HCM Academic Advisor to plan their courses of study. Prospective students may complete their University Core Curriculum requirements and career electives at approved institutions, provided that four-year school and residence requirements are met.

Completing courses at any accredited college or university may satisfy the 39-hour University Core Curriculum requirements; credit received through CLEP, USAFI, DANTES; or through proficiency examinations. The Capstone Option is available to students who have obtained a business or health care-related Associate in Applied Science degree or its equivalent, and who have a GPA of at least 2.3

on a 4.0 scale (SIU calculation) on all work prior to the completion of the Associate in Applied Science degree. for more information please view the Capstone Option section.

Students may apply for credit toward degree completion for previous work experience (HCM 258) or educational and occupational experience (HCM 259). Credit is established by the HCM Academic Review Committee. This committee meets once during the spring and once during the fall. No summer submissions are accepted. Application for credit should be made by contacting the HCM Academic Advisor no later than the end of the student's first semester or no later than after 12 semester hours of completed HCM coursework. Submissions not following these guidelines will not be considered.

Students may request Individual Study opportunities (HCM 299 or HCM 499) through the HCM Academic Advisor. Approval to supervise an Individual Study is at the discretion of the HCM Faculty member that typically teaches the class on-campus. Students need to submit their request for an Individual Study, in writing, to the HCM Academic Advisor by the 6th week of the semester PRIOR to the semester in which the student wishes to complete the Individual Study. The Academic Advisor will forward the student's request to the Program Director for distribution to the appropriate Faculty member for consideration.

In addition to University requirements, students must successfully complete all HCM core courses with a grade of C or higher prior to completing their required HCM 422 internship. Students receiving lower than a C in any HCM core course can only repeat that course once with the exception of HCM 422 which cannot be repeated if failed unless special circumstances apply as determined by the HCM Academic Review Committee. Students must maintain a minimum GPA of 2.3 within the Health Care Management major for graduation. Students receiving a grade lower than a C twice in any individual core HCM course and those who fall below a 2.3 GPA for two subsequent semesters are immediately dropped from the HCM program due to lack of academic performance.

Students participating in internships may be required to undergo a criminal background check and drug screening. Students who do not satisfactorily pass the background check and drug screening may find it difficult to secure an internship in the field of health care and may be removed from the HCM program unless special circumstances apply as determined by the HCM Academic Review Committee. The Internship requirement cannot be waived. Students will initiate and complete the processes involved with internship site selection and applicable SIUC approval processes. Internship hours cannot begin until all approvals have been obtained from the faculty member overseeing the internship processes, the internship site, and SIUC. Any contact hours students participate in prior to the internship being appropriately approved cannot be counted toward the required 150 contact hours.

Given the nature of the industry, there may be class projects or presentations when students are required, by an individual professor and/or the HCM Program Director, to dress professionally.

Online core courses in the HCM program are restricted to online HCM students only. On campus core courses in the HCM program are restricted to on campus HCM students. The HCM program prohibits moving from one format to the other. Students may petition the Program Director to change formats due to a documented medical condition. Such petitions will be taken under consideration only when the proper documentation is received for review.

Bachelor of Science Degree in Health Care Management, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements - (Recommend ECON 240, PSYC 102, HED 101/HND 101/KIN 101).	39
Required Prerequisite/Background Courses: AH 105; ISAT 229; ACCT 210 or ACCT 220; ECON 240 (or equivalents).	11-15
Requirements for Major in Health Care Management	48
Core Requirements: HCM 320, HCM 340, HCM 360, HCM 364, HCM 365, HCM 366, HCM 375, HCM 382, HCM 384,	46

Degree Requirements	Credit Hours
HCM 385, HCM 388, HCM 390, HCM 410, HCM 413, HCM 420, HCM 421	
Internship: HCM 422	2
Electives (Health Care Management, Business and Administration, Finance, Psychology, are encouraged)	16-20
Total	120

Minor in Health Care Management

The Health Care Management program offers three minors. All prerequisites of courses in the minors must be satisfied. Students must consult the HCM Academic Advisor in the School of Allied Health to declare a minor.

The minor in Health Care Management (HCM) is designed to prepare undergraduate students interested in health care management with the skills and knowledge to prepare for graduate study or work in the health care field. A “C” or higher is required in all HCM core courses taken and all 18 semester hours must be completed at SIU. Students must complete these courses:

HCM 320-Health Policy and Politics
 HCM 340-Managerial Epidemiology in Healthcare
 HCM 360-U.S. Healthcare Systems
 HCM 388-Legal Aspects and Current Issues in Healthcare
 HCM 413-Long Term Care Administration
 HCM 420-Healthcare Ethics, Coding, and Compliance

Minor in Long Term Care Administration

The minor in Long Term Care is designed for students with an interest in a Long Term Care (LTC) specialization. The LTC minor is comprised of 17 credit hours of coursework. The course sequence is part of the eligibility requirements for those who wish to sit for the Illinois Nursing Home Administrator Licensure Examination. Students must complete these courses:

AH 105-Medical Terminology
 HCM 364-Organizational Behavior in Healthcare Organizations
 HCM 385-Health Care Finance
 HCM 390-Human Resources in Healthcare
 HCM 413-Long Term Care Administration

In addition to the courses above, students must choose one of the following:

AH 415-Issues Related to Social Gerontology and Mortality
 HED 440 or GRON 440-Health Issues in Aging
 REHB 405 or GRON 405-Introduction to Aging and Rehabilitation
 REHB 446 or GRON 446-Psychosocial Aspects of Aging

Note: Eligibility requirements, as published by the Illinois Department of Professional Regulation (IDPR), are subject to change without notification. It is the student's responsibility to verify IDPR regulations to assure their requirements have not changed. Reciprocity of eligibility to sit for the Licensure Examination, or serve in an administrative role, in other states is the student's responsibility to verify.

Health Information and Informatics Management

The minor in Health Information and Informatics Management (HIM) is designed for students with an interest in a medical billing, reimbursement, auditing, and/or compliance specialization. The HIM minor is

comprised of 20 credit hours of coursework. A grade of "C" or higher is required in all courses and all 20 semester hours must be completed at SIU. Students must complete these courses:

AH 105-Medical Terminology

HCM 360-U.S. Health Care Systems

HCM 366-Health Information Management

HCM 368-Health Care Coding Procedures I

HCM 388-Legal Aspects and Current Issues in Health Care

HCM 410-Operations Management and Quality Improvement in Health Care

HCM 468-Health Care Coding Procedures II

Health Care Management Courses

HCM258 - Work Experience Credit 258-1 to 30 Work Experience Credit. Credit granted for management or supervisory experience in the health care industry. Credit may be applied only to the approved career electives requirement of the health care management degree. Credit is determined by the HCM Academic Review Committee. Restricted to HCM majors.

HCM259 - Occupational Education Credit 259-1 to 30 Occupational Education Credit. Credit granted for past occupational educational experiences related to the student's educational objectives. May be applied only to the approved career electives requirement of the health care management degree. Credit is determined by the HCM Academic Review Committee. Restricted to HCM majors.

HCM320 - Health Policy & Politics 320-3 Health Policy and Politics. A course focusing on the U.S. health policy-making process within the context of the political marketplace. Emphasis is on the ways in which health policy affects the determinants of health. Through real-world cases in health policy, health care management students analyze the public policy environment and gain an understanding of how to exert influence and deal with the political environment. Restricted to SAH major/minor.

HCM340 - Epidemiology/Population Health 340-3 Managerial Epidemiology and Population Health. An exploration of managerial epidemiological principles as they relate to decision making processes involved with the delivery and management of healthcare services. Focuses on issues involved with population and community including outreach and campaigning, evidence based practice, prevention, and comparative effectiveness. Review governance issues in healthcare organizations and explore the role of epidemiology as a foundational tool for making management related decision making processes. A writing-intensive course. Prerequisite: ENGL 101. Restricted to HCM major/minor.

HCM360 - The U.S. Health Care System 360-3 The U.S. Health Care System. (Same as DH 480, RAD 480) This course is a study of the major components which comprise the U.S. health care system. This course will focus primarily on basic terminology, history, settings, personnel, access to care, types of care, utilization of services, vulnerable populations and future challenges for the delivery of health care services. Students will closely review clinical aspects and terminologies as they relate to medical conditions, medical equipment, and medical procedures for the purposes of interacting successfully with health care administrators, physicians/providers of care, and patients. This is a labor intensive course requiring extensive out-of-class study. Restricted to SAH major, HCM majors/minors.

HCM364 - Org Behavior Healthcare Orgs 364-3 Organizational Behavior in Healthcare Organizations. (Same as DH 481, RAD 481) An evaluation of relationships in healthcare organizations. Study of the motivational factors of those focused on patient care vs. those focused on profits and how to modify behaviors to achieve proper balance. Environmental factors of the healthcare field are evaluated for their impact on the behavior and employee-management relations of healthcare professionals and patient care providers. Promotes effective planning and organizing within the complex and highly regulated healthcare industry and assures alignment of organizational goals with the missions/visions/values as related to quality of patient life and organizational success. Restricted to SAH major/minor or with consent of SAH Academic Advisor.

HCM365 - Stats/Research HC Professions 365-3 Statistics and Research for Health Care Professions. A course for students beginning a major in health care professions. Students examine and apply data to their professions with an emphasis placed upon the understanding of the basic principles, techniques and

applications involved with analysis, synthesis and utilization of data. Focus will be placed on using data for empirical research. Prerequisite: UCC MATH 101 or higher. Restricted to SAH major/minor.

HCM366 - Health Information Management 366-3 Health Information Management. This course provides a multi-disciplinary analysis of the strategic application of information systems technology and the management of such in health care organizations and focuses on using leveraging information systems to analyze clinical data. Students will review reimbursement mechanisms used to track service utilization patterns which assist in the decision making processes within an overall organizational capacity and for the purposes of quality/performance improvement. Leadership aspects pertaining to evidence based management and governance will be explored as well as challenges facing the health care industry in terms of the management of information systems. Restricted to HCM major/minor.

HCM368 - HC Coding Procedures I 368-3 Health Care Coding Procedures I. This course is a study of the major components and processes involved with medical coding as required for the reimbursement of health care services and for capturing data for information and informatics used in managerial decision making within the health care industry. Medical documentation, ICD-9/10-CM coding, CPT coding, HCPCS, the claims processes will be covered through hands-on course exercises and case studies. Prerequisites: AH 105, HCM 360, HCM 366 with grades of C or better.

HCM375 - Analysis and Evaluation 375-3 Analysis and Evaluation of Health Care Services. An examination of theory and practices in the evaluation of health care programs. Special attention is given to identifying program objectives, measuring performance, and designing evaluation studies. Both qualitative and quantitative methods of analysis and evaluation are covered (quasi-experiments, cost-effectiveness analysis and participant observation). Restricted to SAH major/minor.

HCM382 - Health Economics 382-3 Health Economics. An analysis of the economics of health care in the United States and its effect on society and the health care profession. Includes analysis of supply and demand of medical care; consumer, producers, and insurers behavior; and public policies to regulate and provide health care. Restricted to HCM majors or minors. Prerequisite: ECON 240 with a grade of C or better.

HCM384 - Strategy and Marketing 384-3 Strategic Planning and Marketing in Health Care. A course that analyzes the fundamentals of strategic planning and leadership in health care organizations. Emphasis is placed on governance, mission, vision, values, leadership styles, business plans, marketing principles and strategies, and SWOT analysis. Fundamental aspects of marketing will be introduced along with an exploration of the strategical planning processes involved with formulation, implementation, actions, execution, and control.

HCM385 - Health Care Finance 385-3 Health Care Finance. An introduction to the fiscal problems in healthcare organizations. Emphasis is placed on health care reimbursement, working capital, financial statements, and accounting/monetary control of the health care industry. Prerequisite: UCC MATH 101 or higher and Accounting 210 or 220. Restricted to SAH major/minor or with consent of an SAH Academic Advisor.

HCM388 - Legal and Current Aspects 388-3 Legal Aspects and Current Issues in Health Care. (Same as DH 482, RAD 482) Principles of law and the U.S. legal system are applied, in part, through case study and an exploration of current events, in the areas of health care management. Legal issues include malpractice, contracts, corporate liability, professional liability, patient rights, and the legal aspects of managed care. Restricted to SAH majors/minors.

HCM390 - Human Resources 390-3 Human Resources in the Health Professions. Examines factors impacting healthcare organizations and how effective human resources policies and procedures can improve organizational efficiencies within the context of emerging health care models/legislation. The recruitment, hiring, orientation, reviewing, and retention of healthcare professionals in the midst of labor shortages will be addressed with an emphasis of linking outcomes to patient care. Legal and ethical implications associated with the healthcare workforce, including credentialing, CEUs, and unionization will be discussed. Cultural competency will be explored with an emphasis on diversity and inclusiveness for both the health care professionals and as part of the patient experience. Prerequisite: ENGL 101 with a grade of C or better. Restricted to SAH major/minor.

HCM410 - Operations Mgmt & QI 410-3 Operations Management and Quality Improvement in Health Care. Examines the applications of operations management in the framework of health care organizations. Focus will be placed on supply chain and inventory management, forecasting, queuing models, and capacity planning. Determinants to achieve quality management in health care facilities will be explored. Utilizes analytical methods of systematic monitoring and evaluation and the application of quality improvement initiatives. Includes impact on quality of accreditations, credentialing, liability, and governmental regulations. Not for graduate credit. Restricted to SAH majors/minors.

HCM413 - LTCA 413-3 Long Term Care Administration. A study of the principles of nursing home management and assisted living services which examines administrative and staffing functions relating to clients, community, public policy, programming, state and federal laws, and financing. Examines post-acute care issues related to seamless transitions along the continuum of patient care. Not for Graduate Credit. Restricted to SAH major/minor.

HCM420 - Health Care Ethics 420-3 Health Care Ethics. Exploration of the ethical issues surrounding the delivery of health care services. Students will apply ethical principles and decision making processes to a series of cases involving ethical dilemmas unique to the health care environment. Students will carefully explore governance and regulatory issues associated with health care organizations and how their actions as future health care managers will impact the patients and employees they serve and will be microscopically examined by varying entities. Controversial topics such as abortion, religion, and right to die will be discussed as they relate to patient perspectives, values, beliefs and the health care managers' obligation to respect individuals without bias. Not for graduate credit. Restricted to SAH major/minors.

HCM421 - Professional Practice 421-1 to 3 Professional Practice for Health Care Managers. Prepares students for their health care management internship. Resumes, cover letters, internship site selection, and MOUs will be completed by end of this course. Professional development topics such as interview skills and networking will be covered. Not for graduate credit. Restricted to HCM majors. Special approval needed from the academic advisor.

HCM422 - Internship 422-2 to 9 Health Care Management Internship. As an intern in a University approved healthcare facility, students will engage in activities related to the healthcare management field. Each student will perform duties as assigned to complete a managerial/analytical project useful to the organization. Report logs and performance evaluation required. Hours and credit to be arranged individually with course instructor and site supervisor. 1 credit hour=75 contact hours. A minimum of 150 contact hours required. No waiver of internship is permitted. No repeat of the course is allowed. Must have an internship site secured from HCM 421 prior to enrolling in HCM 422. End of program review and evaluation will be conducted. Prerequisite: completion of all HCM core courses with minimum grade of C. Restricted to HCM major with consent of Academic Advisor. Not for graduate credit.

HCM460 - Lean Six Sigma in HC 460-3 Lean Six Sigma in Healthcare. An introductory course focusing on the Lean Six Sigma approach to improving quality in healthcare organizations. An exploration of error prevention, problem solving, problem detection, change management, and effective and efficient process improvement. Cases will be used to demonstrate how the approach can be applied specifically to the healthcare industry. Restricted to junior standing and SAH majors or minors.

HCM461 - Phys Practice Operations 461-3 Introduction to Physician Practice Operations. An introductory course designed to examine the different aspects of operating a physician's practice. Focus is placed on licensing and professional regulation; selection of HMOs, PPOs, and other managed care programs; medical records and regulatory compliance; community outreach required for building a medical practice, and practical development of templates for practice activities such as streamlined appointment scheduling and encounter forms. Not for graduate credit.

HCM462 - HC Consumer 462-3 Healthcare Services and the Consumer. A course designed for users of health care services, students will explore the history of US healthcare reform and landmark healthcare legislation known as the Affordable Care Act. Focus is on the impact of healthcare organizations, employers, insurers, medical practice, the economy, and especially the consumer of health care services. Exploration of varying ACA plans, interpretation of EOBs, and a review of coding/billing mechanisms such as ICD, CPT, Co-Pays, Deductibles, Assignment of Benefits, Capitation, Co-Insurance, Coordination of Benefits, etc. will be explored aiding consumers of health care services in making informed health care decisions. Course uses microcomputer applications. Not for graduate credit.

HCM468 - HC Coding Procedures II 468-3 Health Care Coding Procedures II. Advanced course in medical coding and auditing. This course examines coding audits associated with regulatory bodies such as OIG, DOJ, CMS, and RAC. Students will learn to extract specific clinical data and utilize it for quality improvement initiatives, data analytics, patient marketing, reporting mechanisms, audits, and managerial decision making. Emphasis is placed on calculating and reporting healthcare outcomes and the legalities/ethical challenges of accurate medical coding for HER, physician practices, hospitals, hospice, and other organizations that provide health care services. Not for graduate credit. Prerequisite: HCM 368 with a grade of C or better.

HCM499 - Individual Study 499-1 to 6 Individual Study. Provides third or fourth year health care management students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Each student will work under the supervision of a sponsoring program faculty member approved by the HCM Academic Review committee. Not for graduate credit. Restricted to HCM majors.

Health Care Management Faculty

Cataldo, Jessica, Clinical Instructor, MPH, University of Illinois at Chicago, 2014.

Collins, Sandra K., Professor, Ph.D., Southern Illinois University Carbondale, 2010.

Lloyd, Leslie Freels, Associate Professor, Emerita, Rh.D., CRC, Southern Illinois University Carbondale, 1993.

Rados, Robert, Assistant Professor, MPH, Ph.D., Southern Illinois University Carbondale, 2003.

Shaw, Thomas A., Associate Professor, Ph.D., Southern Illinois University, 2005.

Walter, Marcea L., Assistant Professor, MHSA, Xavier University, 2011.

History

Students may pursue either a B.A. or a B.S. in History. A B.A. in History consists of 36 semester hours, and a B.S. in History consists of 33 semester hours. Students who plan advanced study in preparation for college teaching, law or other professional work are advised to take additional work in their proposed specialty. Students must consult with departmental advisors to choose a course of study that fits their needs, and they should also consult with college and career services advisors for assistance in determining their career goals.

Papers written in HIST 392 meet the College of Liberal Arts Writing-Across-the-Curriculum (WAC) requirement. A number of 400-level courses also meet the WAC requirement. Please consult course descriptions. Students who receive a grade of B or higher in 100-level (CORE) History courses may receive credit toward the major. Consult with an advisor.

All history majors must meet with the department's undergraduate advisor each semester to keep up to date the records of their progress toward the degree and to receive advance approval of their courses. A 2.0 average in the major and a C grade or better in HIST 392 are required for graduation. A 3.0 average in the major and completion of HIST 392 are required before the department will approve student teaching. If the student is taking HIST 392 when applying to student teach, a letter indicating satisfactory performance from the instructor is required.

Transfer students must report to the department prior to their first semester of attendance. The department will accept up to 18 credit hours in history taken at other accredited institutions. All transfer students must take at least 18 semester hours in history at Southern Illinois University Carbondale.

History Honors Program

Outstanding students enrolled in the University Honors Program may pursue an Honors Major in History. Course credit requirements are identical to those for a regular Bachelor of Arts degree (including 36 hours in History), except that at least eight classes must be honors classes. Usually, these are four UHON classes in the student's first two years of study and four History Honors classes as a junior and senior.

Honors courses in History include the following: HIST 330H (Modern Britain), 406BH (Gender, Family and Sexuality in Modern Europe), HIST 417H (Ritual and Revolt in Early Modern Europe), HIST 418H (The Renaissance), HIST 426H (Cities and Cultures in Europe, 1870-1914), HIST 427H (World War I), HIST 447H (Culture and the British Empire), and HIST 455H (The Conservative View in American History). All of these courses are cross-listed with the University Honors Program. In addition, students may receive Honors credit for other History courses through an Honors contract with the course instructor.

Students are also required to write an Honors thesis. Honors students can do this in one of three ways: by signing up for UHON 499 under the guidance of a departmental faculty member in their senior year, enrolling in HIST 499, or by taking a 500-level graduate colloquium/seminar series (pending instructor approval). This thesis can be part of a History Honors Major, but students who are not enrolled in University Honors may also write an Honors thesis.

Bachelor of Arts Degree in History, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	11
Requirements for Major in History	36
HIST 101A and HIST 101B	6
HIST 207	3
HIST 300	3
HIST 301	3
HIST 392	3
History electives, 300 level or above distributed in at least two fields of history ¹	18
Electives - These may include courses required for teaching certification in Social Sciences.	34
Total	120

¹ Students must complete a minimum of four courses at the 400-level. At least one 300- or 400-level course must be on a topic in the following areas: Africa, Asia, Atlantic World, Latin America, or Middle East.

Bachelor of Science Degree in History, College of Education and Human Services

(History Designation for the Illinois Social Sciences Teaching License)

In order to teach the social sciences in middle school, junior high, and high school levels, two options for Illinois licensure in social studies education with a designation in history are offered: a Bachelor of Science degree in Social Science Education and a Bachelor of Science degree in History Education.

Teacher candidates pursuing the first option of a Social Science Major in the College of Education and Human Services will work toward a designation in history, and they will select an additional concentration in geography or political science. Teacher candidates working toward the second option will take additional coursework in history.

The goal for both programs of study is to prepare prospective social science teachers for the role of leadership in guiding middle school, junior, and senior high school students to live as effective citizens in a democratic society.

Content and professional coursework provide the foundation used in the social science methods course, where teaching methods and strategies are explored and experienced. A series of clinical experiences provide teacher candidates an opportunity to use the knowledge and skills acquired in their program. A cooperating teacher and a University supervisor will assist the student to blend knowledge and skills with the adolescent behavior and curriculum needs.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
To include Core Fine Arts (HIST 201 recommended); HIST 101A & HIST 101B as Core Humanities; HIST 300; POLS 114; PSYC 102; GEOG 104 or GEOG 303I as Core Science I substitute.	
Requirements for Major in History ¹	24
HIST 207	3
Two additional 300-400 level non-US history course ²	6
HIST 301	3
One additional 300-400 level U.S. history courses	3
HIST 367	3
HIST 392	3
One 300-400 level history elective	3
Additional Requirements for the Social Science Teaching License ³	18
To include ANTH 104; ECON 113; GEOG 103, GEOG 300I; POLS 250 or POLS 270; and SOC 108. Additional social science courses are recommended if a student's program permits; recommended electives would include ANTH 202; ECON 240, ECON 241; POLS 213; PSYC 303; SOC 302, SOC 303.	
Professional Education Requirements - EDUC 211, EDUC 214, EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, EDUC 401A	30
Additional Certification Requirements - CI 360, CI 469, CI 470	6

Degree Requirements	Credit Hours
Total	120

- 1 At least nine hours must be taken at the 400 level.
- 2 At least one of these must be a 400-level course.
- 3 The Social Science teaching license allows a teacher to teach courses on the secondary level.

History Minor

A minor consists of 18 semester hours. The student is advised to balance courses between at least two of the three fields of American, European, or Third World history. Transfer students, in order to have a minor in history, must have taken at least nine semester hours in history at Southern Illinois University Carbondale. University Core Curriculum history courses count toward the minor.

History Courses

HIST101A - History of World Civ I 101A-3 The History of World Civilization I-To Industrialization. (University Core Curriculum) A survey of various civilizations in the world from prehistory to the present with particular attention to non-western cultures.

HIST101B - History of World Civ II 101B-3 The History of World Civilization II-Since the Age of Encounter. (University Core Curriculum) A survey of various civilizations in the world from prehistory to the present with particular attention to non-western cultures.

HIST110 - 20th Century America 110-3 Twentieth Century America. (University Core Curriculum) The history of the United States since 1900. Surveys cultural, social, economic and political development, with special emphasis on domestic pluralism and changing international roles.

HIST112 - 20th Century World 112-3 The Twentieth Century World. (University Core Curriculum) The history of Europe, Asia, Africa and Latin America since 1900. Emphasis on political conflict, economic development, social change and cultural transformation in an increasingly integrated world.

HIST201 - Art,Music,Ideas Western World 201-3 Art, Music and Ideas in the Western World. (University Core Curriculum) [IAI Course: HF 902] The historical evolution of the visual arts, architecture and music in the context of society and literature, from ancient Greece to the present. It emphasizes the fundamental historical relationship of the different genres of human expression in Western culture.

HIST202 - America's Religious Diversity 202-3 America's Religious Diversity. (University Core Curriculum) [IAI Course: H5 905] An introduction to the basic concepts and histories of the world's religions and their place in American society. The purpose is to increase our understanding of cultural and religious diversity and how the various religious traditions inform our world views.

HIST205A - History of Western Civ 205A-3 History of Western Civilization-From Ancient Times Through the Sixteenth Century. (University Core Curriculum) [IAI Course: S2 902] A brief survey of the major developments and trends in European history from ancient times through the 20th Century.

HIST205B - History of Western Civ 205B-3 History of Western Civilization-The Seventeenth Century to the Present. (University Core Curriculum) [IAI Course: S2 903] A brief survey of the major developments and trends in European history from ancient times through the 20th Century.

HIST207 - World History 207-3 World History. (Advanced University Core Curriculum course) An investigation of select issues in societies of the world from pre-history through the 20th century, with a focus on primary source interpretation. Some sections of this course may be limited to History majors. Please consult with advisor and/or instructor.

HIST212 - American Studies 212-3 Introduction to American Studies. (Same as ENGL 212) (University Core Curriculum) Offers interdisciplinary approach to the study of America and American selfhood, and thus to the central question, "What is an American?". Texts range from novels and films to museums and shopping malls. Issues range from multiculturalism to abstract notions such as citizenship and authenticity. Fulfills central requirement for American Studies Minor.

HIST300 - Origins of America: 1492-1877 300-3 The Origins of Modern America, 1492-1877. (Advanced University Core Curriculum course) [IAI Course: S2 900] A general survey of political, social, and economic development of the United States from 1492 to 1877. Satisfies the University Core Curriculum Multicultural requirement in lieu of 210.

HIST301 - Modern America: 1877-Present 301-3 Modern America from 1877 to the Present. (Advanced University Core Curriculum course) [IAI Course: S2 901] A general survey of the political, social and economic development of the United States from 1877 to the present. Satisfies the University Core Curriculum Social Science requirement in lieu of 110.

HIST303 - Topics in History 303-1 to 9 Topics in History. Topics will vary with instructor. May be repeated for a maximum of nine semester hours, provided registrations cover different topics.

HIST311 - Ancient Near East/Mediterranean 311-3 The Ancient Near East and Mediterranean. A comparative study of ancient near eastern and classical civilizations of the Fertile Crescent and the Mediterranean Basin: Mesopotamia, Egypt, Palestine, Greece and Rome.

HIST312 - History of Italy 312-3 History of Italy. An examination of the major societies which have occupied the Italian Peninsula from the Roman era to the present, with emphasis on ancient times, the middle ages and Renaissance and the unification movement of the Nineteenth Century.

HIST313 - Ancient & Medieval Spain 313-3 Ancient and Medieval Spain. Investigation into the societies and cultures of the Iberian Peninsula from the Roman conquest to the Inquisition. Focus on cultural interchange and conflict between pagans, Christians, Jews and Muslims.

HIST315 - Medieval Europe 315-3 Medieval Europe. The emergence of Europe from the Age of Constantine to the Black Death, with emphasis on the political, socio-economic, and cultural forces which were at work creating Europe.

HIST320 - Early Modern Europe 320-3 Early Modern Europe. The development of Europe from the Renaissance through the Age of the French Revolution.

HIST324 - Women and Gender History 324-3 Women and Gender History. (Same as WGSS 348) Survey of women and gender history. Chronology and focal themes will vary with instructor.

HIST325 - U.S. and World War II 325-3 War & Society: The U.S. and World War II. This course is designed to provide an in depth examination of the U.S. during World War II, analyzing the major events, issues, and figures prominent on the homefront and the battlefield. Particular emphasis will be paid to America's role as a global power in a global war.

HIST328 - History of France 328-3 History of France. A survey of main themes (social, cultural, economic, political) in French history from the middle ages to the present.

HIST329 - Nazi Germany 329-3 Nazi Germany. This course explores politics, culture, and society in National Socialist Germany. Themes include Adolf Hitler's rise to power, conformity and resistance under a dictatorship, propaganda, war and persecution, and the legacy of Nazism after World War II. Using a variety of media, including novels and films, the course asks how a modern, industrialized country could transform itself into what one historian has called "the racial state".

HIST330 - British History 330-3 History of Britain. A survey of British history from the Roman conquest in 43 CE through to the modern day, focusing on political, economic, social, and cultural developments.

HIST330H - Modern Britain 330H-3 Modern Britain. Survey of the history of the British Isles from Roman times to the present, with emphasis on the period after 1688. Students taking the course for Honor's

credit will complete all assigned exams for the course as well as write a longer, more detailed original research paper (approximately 15-20 pages in length) on a topic of their choice pertaining to the course.

HIST333 - British Empire 333-3 British Empire. A survey of the British Empire, from the loss of the American colonies to the onset of decolonization at the end of the Second World War. It focuses on the intersections between the histories of Britain and of its imperial possessions in Africa, Asia and the British West Indies. Special attention will be given to the role of the nation and of race, class, gender and sexuality in the making of the British Empire.

HIST334 - Modern German History 334-3 History of Modern Germany. This course considers the important historical and moral questions posed by modern Germany history. It begins with the unification of Germany and explores such themes as World War I, the Weimar Republic, national socialism, the Holocaust, East Germany and reunification.

HIST337 - Modern Russia 337-3 Modern Russia. Russia from Peter the Great with main emphasis on 19th and 20th centuries. Emphasis on political history.

HIST338 - Eastern Europe 338-3 Eastern Europe. An historical survey of the East European area from the Baltic to the Balkans, with emphasis on the modern era.

HIST340 - History of The Cold War 340-3 International History of the Cold War. This course is designed to acquaint students with the themes, events and figures prominent in the Cold War era. The origins of the Cold War and the global ramifications of sustained tension among the rival powers will be discussed. The events and the people within the context of their times will be evaluated.

HIST344 - American Capitalism 344-3 American Capitalism. This course is equivalent of American Capitalism (HIST 464). HIST 344 does not require a research paper. Normally, both courses will meet at the same time and place, although they could be offered separately depending upon student demand and curricular needs.

HIST351 - African-Atlantic Spirituality 351-3 African-Atlantic Spirituality. (Same as AFR 351) This course explores the ways that African-Atlantic societies have expressed the interaction of people in the visible world with the spiritual powers of the invisible world. The course begins with the ancient foundations of these spiritual systems and then examines the historical transformation of these systems in West Africa, Central Africa, and the Americas into the twentieth century.

HIST352 - Social History of the US 352-3 Social History of the United States. The historical development of social interaction and relationships among America's various ethnic, religious, racial, economic and sexual groups. Covers colonial America to the present.

HIST353 - War and Peace in America 353-3 War and Peace in America since 1500. This course examines the varieties of warfare and the alternatives to war in America from the time of first meetings of Europeans, indigenous American populations, and Africans to the present. Subjects include the just and unjust war, the rules of war, the role of the military and alternative institutions to maintain peace, civil and foreign wars, the costs and benefits of war and peace.

HIST354 - The Contemporary US 354-3 The Contemporary United States. A survey of the social, economic, political and cultural changes in the United States since the end of World War II, focusing on such topics as the Cold War, changes in the lives of women and minorities, the Vietnam War, the social movements of the 1960s, the imperial presidency, and the Reagan revolution.

HIST355 - Radical View U.S. Hist 355-3 The Radical View in American History. A survey of American radicalism from the revolution to the present, with an emphasis on twentieth century movements for social change.

HIST356 - US Women's History 356-3 U.S. Women's History. (Same as WGSS 356) This course will survey the role of women in US history from colonial times to the present. Students will be introduced to contributions made by women to US society, politics and culture.

HIST357 - Women and Work in the US 357-3 Women and Work in the United States. (Same as WGSS 357) An introduction to the diversity of women's experiences as workers in the home, the household economy, and the labor market segregated by race, ethnicity and gender.

HIST358I - Intro to Peace Studies 358I-3 Introduction to Peace Studies. (University Core Curriculum) (Same as CP 358I) Introduces students to Peace Studies as an interdisciplinary field, focusing on the history, theory, and practice of alternatives to violence. Considers the structural and systemic reasons for violence and war; the history of peace movements; the role of media in escalating violence and providing solutions. Lecture-discussion format with presentations by speakers from a variety of disciplines. No prerequisites.

HIST359 - US in the 1960s 359-3 The United States in the 1960s. Examines the roots, events, ideas and legacies of the 1960s through readings in history and literature, and through films and music. Focus will be on the social protest movements of the era and their impact on American society. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST360 - American Rural History 360-3 American Rural History. (Same as WGSS 360) An examination of America's rural history from the 17th to the 20th centuries, focusing especially on social and economic relationships and attitudes, the role of ethnicity and gender, environmental and technological issues, agrarian radicalism and governmental activities.

HIST361 - Race & History in U.S. 361-3 Race and History in the United States. (Same as AFR 360) This account of racial attitudes and race relations begins with the 16th century European racial experience and covers subsequent developments in the U.S. to the present time. The problem of race is treated in its several dimensions, but principal emphasis falls upon the historical consequences of Caucasian confrontations with blacks, Hispanics, and native Americans.

HIST362A - Black American History to 1865 362A-3 Black American History to 1865. (Same as AFR 311A) The role of blacks and contribution in the building of America and their ongoing fight for equality.

HIST362B - Black American Hist Since 1865 362B-3 Black American History Since 1865. (Same as AFR 311B) The role of blacks and contribution in the building of America and their ongoing fight for equality.

HIST364 - The Great Depression in U.S. 364-3 The Great Depression in the United States. Causes and effects of the Great Depression and of governmental measures for relief, recovery, and reform during the years 1929-1942.

HIST365 - American Immigration 365-3 American Immigration. A history of American immigration and ethnicity from colonial times to the present, with primary attention upon the peoples of the United States and the diverse lands from which they have come.

HIST366 - American Indian History 366-3 American Indian History. A survey of American Indian history from the Paleolithic age to the present. Emphasis upon interactions and relationships among cultural groups during pre-colonial, colonial and modern era.

HIST367 - History of Illinois 367-3 History of Illinois. The history of the state from 1818 to the present.

HIST368 - American Religious History 368-3 American Religious History. (Advanced University Core Curriculum course) A chronological and thematic history of religion in America focusing on (1) the diversity of American religions from the religions of the Amerindian to the development of new religious movements, and (2) the unity of American religion mediated through mainstream Protestantism and civil religion. Satisfies University Core Curriculum Multicultural requirement in lieu of 202.

HIST370A - Hist of Latin America-Colonial 370A-3 History of Latin America-Colonial Latin America. An introduction to the political, economic, social, and cultural development of Latin America from Pre-Columbian times to the present.

HIST370B - Hist of Latin Amer-Independent 370B-3 History of Latin America-Independent Latin America. An introduction to the political, economic, social, and cultural development of Latin America from Pre-Columbian times to the present.

HIST372 - Arabs & Jews in Latin America 372-3 Arabs and Jews in Latin America. This course traces historical events, ideas, and trends that gave voice to the waves of Arab and Jewish immigrants who call Latin America home, even while simultaneously remaining connected in religion, language, and heritage to Europe and the Middle East. It will explore the multiple diasporas that have made Old World-New World Latin America a 'discovered' continent of opportunity, prosperity, and 'acceptance'.

HIST380A - History of East Asia to 1600 380A-3 History of East Asia to 1600. A broad survey of the history of China, Korea and Japan from early times to present.

HIST380B - Hist of East Asia Since 1600 380B-3 History of East Asia Since 1600. A broad survey of the history of China, Korea and Japan from early times to present.

HIST381 - History of Modern India 381-3 History of Modern India. Survey of Indian history from the time of the Mughals to the present day with an emphasis on the British colonial period between 1765 and 1947, its impact on India, and the Indian struggle against British rule.

HIST383 - Islamic Civilization 383-3 Islamic Civilization. Course introduces Islamic history, culture and civilization from the rise of Islam in Arabia in the seventh century to the early nineteenth century. Topics include the formation of the Islamic community, the fundamental teachings of Islam, Islamic expansion, Sunni and Shi'i Islam, Sufism and popular Islam, Islamic law and Islamic political thought, the position of women in Islamic thought and practice, Islamic science, art and culture, contact and confrontation between Islam and the West, Islam in borderlands, and the Abbasid, Safavid and Ottoman Islamic civilizations.

HIST384 - The Modern Middle East 384-3 The Modern Middle East. This course surveys the history of the Middle East from the late 18th century until the present, concentrating primarily on the Ottoman Empire and its successor states (exclusive of the Balkans) and Iran.

HIST385 - Islam and the West 385-3 Islam and the West. A history of the religious and cultural interaction between the Islamic and Western world. Surveys the changing image of Islam in western literature, the Muslim response to secularism, and the Islamic presence in Europe and America.

HIST387A - History of Africa to 1800 387A-3 History of Africa to 1800. (Same as AFR 314A) A chronological study of African peoples from earliest times to the present, including ancient Egypt, Ethiopia, the Era of the African Kingdoms, the role of Islam, the slave trade, African-European relations, colonialism, African nationalism and independence.

HIST387B - History of Africa Since 1800 387B-3 History of Africa Since 1800. (Same as AFR 314B) A chronological study of African peoples from earliest times to the present, including ancient Egypt, Ethiopia, the Era of the African Kingdoms, the role of Islam, the slave trade, African-European relations, colonialism, African nationalism and independence.

HIST388 - World Wars Africa 388-3 The World Wars in Africa. (Same as AFR 388) An account of the world wars in African history. Topics to be covered include an examination of the spilling of European conflicts over into Africa, the battle grounds, manpower and resource mobilization with an emphasis on the role of women, the social, economic, and political impacts of the wars on African societies and African combatants, the role of non-European powers (South Africa and the United States), and how the wars enhanced political awareness of Africans in their struggles for independence, particularly after World War II.

HIST392 - Historical Research & Writing 392-3 Historical Research and Writing. Methods of historical investigation, criticism and composition. Restricted to undergraduate majors in history. May not be taken more than twice without completion. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Restricted to history majors and social science majors.

HIST393 - Military History 393-3 Military History. An introduction to the problems of armed conflict throughout history with emphasis varying by instructor. Restricted to sophomore standing and above or consent of instructor.

HIST395 - Honors 395-3 Honors. Great ideas and works of history, with discussion of conflicting interpretation of major historical problems. Restricted to junior standing. Special approval needed from the department.

HIST401 - Atlantic History 401-3 Atlantic History. This course examines the origins and development of the Atlantic basin as an intercommunication zone for African, European and American societies from the mid-15th century through the early-19th century. Themes include transformation of environments, forced and voluntary migrations, emergence of distinct Atlantic culture communities, development of Atlantic economics and formulation and implementation of Atlantic revolutionary ideologies.

HIST403 - American Indians & US Empire 403-3 American Indians and U.S. Empire. Use historical analysis to investigate sovereignty issues involving American Indians and the United States. The course looks critically at the relationship between Native people and dominant U.S. society in terms of colonialism. Students will read academic scholarship and write papers on related cultural, economic, political, and social topics. The course is designated as Writing Across the Curriculum (WAC). Prerequisite: None, HIST 366 recommended.

HIST406A - Gender/Family/Sex Pre-Mod Eur 406A-3 Gender, Family and Sexuality in Pre-Modern Europe. (Same as WGSS 406A) A discussion of the history of the family, creation of gender roles and importance of sexuality from medieval times to the French Revolution.

HIST406B - Gender/Family/Sex in Mod Eur 406B-3 Gender, Family, and Sexuality in Modern Europe. (Same as WGSS 406B) A discussion of the history of family, creation of gender roles, and importance of sexuality from the French Revolution to the present. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST406BH - Gender/Family/Sex Mod Europe 406BH-3 Gender, Family, and Sexuality in Modern Europe. A discussion of the history of family, the creation of gender roles, and the importance of sexuality in European history since the French Revolution. Students taking the course for honor's credit will write longer reflective essays on the readings of the course as well as take a more active role in leading class discussions.

HIST407 - History of Latinos in the US 407-3 History of Latinos in the United States. This course examines the history of Latino/a and Latin American peoples in the United States from the Colonial Era to the present. Themes to be addressed in the course include early imperialism and commercial expansion, the social construction of race, the formation of "borderland" communities, Latino immigration and assimilation, the centrality of work and labor within Latino history, and contemporary Latino culture and politics.

HIST408 - History of Mexico 408-3 History of Mexico. This course surveys the history of Mexico from the earliest human inhabitation to the present. It will present different interpretations of the major themes and developments in Mexican history. A goal is to understand Mexico from the perspective of the Mexicans rather than from the point of view of the United States. Themes to be included in the course include the diversity of pre-Columbian indigenous societies; Spanish conquest; colonialism and anti-colonialism; Mexican independence; the historiography of the Mexican Revolution; and the place of Mexico within the world-economic system.

HIST409 - Food and History 409-3 Food and History. Food is fundamentally about survival-it was for our ancestors millenia ago, and continues to be so, not only for the millions of undernourished worldwide, but for all of humanity as we confront the impact of obesity, globalization and environmental change. Because food is essential to our survival, its history is long, varied, and rich, and touches on themes including (but not limited to) politics and government; gender, race, and ethnicity; the family, religion and culture; health and the environment, and business, industry, and advertising. This class will explore these themes of global food history.

HIST410 - 19th Century Europe 410-3 Europe in the Long Nineteenth Century, 1789-1914. This course offers a topical examination of the history of Europe from the French Revolution to World War I, mainly focusing on the French Revolution, industrialization, nationalism and nation building, and imperialism. There will also be some focus on European intellectual and cultural transformations during this period. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST412A - Empire & Conflict Roman Republic 412A-3 Empire and Social Conflict in the Roman Republic. The social, political and cultural consequences of Roman expansion during the Republican period (c. 700-44 BCE). Focus on reading and analyzing primary sources. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST412B - Religion/Society Imperial Rome 412B-3 Religion and Society in Imperial Rome. Religious, social, and cultural conflict and change in the Roman Empire, first through third centuries. Focus on reading and analyzing primary sources. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST413 - Christ Power Society Late Antiquity 413-3 Christianization of Power and Society in Late Antiquity. An investigation into the political and social changes involved in the rise of Christian leadership in Western Europe following the fall of the Roman Empire. The course will focus on reading and analyzing primary sources from the fourth through the eighth centuries. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST417 - Ritual Revolt Early Modern Europe 417-3 Ritual and Revolt in Early Modern Europe. This course examines political practices on different levels of European society from the later middle ages through the Enlightenment: court ritual, popular revolts, patronage networks, representative assemblies and family politics are among the topics covered. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST417H - Ritual/Revolt Early Modern Europe 417H-3 Ritual and Revolt in Early Modern Europe. This course examines the social and political processes of ritual and revolt on different levels of European society from later middle ages to the French Revolution: court ritual, lifecycle rituals, religious rituals, popular protests, and revolution are among the topics covered. Honors students will select a topic to research during the course of the semester. Each student will lead the class in a discussion of his/her topic during the semester, and write a research proposal and annotated bibliography on that topic due at the end of the semester.

HIST418 - The Renaissance Exchange 418-3 The Renaissance Exchange. Course employs the traditional Renaissance themes of economic, political and cultural developments in Italy and Europe from 1300-1550 as the framework for detailed examination of European interactions - economic, ideological, religious - with Asia, the Middle East and the Americas. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST418H - The Renaissance 418H-3 The Renaissance. Course employs the traditional Renaissance themes of economic, political and cultural developments in Italy and Europe from 1350-1550 as the framework for detailed examination of European interactions-economic, ideological, religious-with Asia, the Middle East and the Americas. The honors section of the course will look at the "Renaissance of the Renaissance"-the resurgence of Renaissance ideas and culture in modern film, political discourse, art, literature and other forms of entertainment. What does this nostalgia for the past and these revamped or reinvented traditions tell us about the past and present?

HIST420 - Reformation 420-3 Reformation. Concentrates on the movement of religious reforms in the 16th Century. Emphasis on its roots in the past, particularly in earlier expressions of popular piety and to the wider social and political effects in the 16th and 17th centuries. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST421 - The French Revolution 421-3 The French Revolution. This course will consider the causes, events and outcomes of the French Revolution and Age of Napoleon (1789-1815) and situate the revolution in a global context. Themes to be considered include the influence of the American Revolution and the Enlightenment, democracy and human rights, forms of popular and female protest, revolutionary culture, French imperialism and the fight for freedom in Haiti and the legacies of the revolution.

HIST422A - Intellectual History Europe 1600-1815 422A-3 Intellectual History of Modern Europe 1600-1815. This course looks at European thinkers and intellectual movements from approximately 1600 to 1815. Topics include the Scientific Revolution, the Enlightenment, and early 19th Century Romanticism. The course also examines aesthetic and literary movements during the "Age of Reason".

HIST422B - Intelct Hist Europe Since 1815 422B-3 Intellectual History of Modern Europe Since 1815. This course looks at European thinkers and intellectual movements from the 19th Century to the present. Subjects include Marxism, Darwinism, Existentialism, Liberalism and Conservatism. The course also examines aesthetic and literary movements over the last two centuries, and it explores intellectuals and their links to the political movements of the modern age.

HIST425A - 20th Cent Europe: 1914-1945 425A-3 Twentieth Century Europe 1914-1945. Political, social, cultural and economic development of the major European states during the present century.

HIST425B - 20th Cent Europe Since 1945 425B-3 Twentieth Century Europe Since 1945. Political, social, cultural and economic development of the major European states during the present century.

HIST426 - City Culture Europe 1870-1914 426-3 Cities and Culture in Europe 1870-1914. Cultural and social history focusing on four European cities (Paris, Berlin, Vienna, St. Petersburg) in the Fin-de-Siecle period (1870-1914). Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST426H - Cities/Cultrs Europe 1870-1914 426H-3 Cities and Cultures in Europe, 1870-1914. Cultural and social history focusing on four European cities (Paris, Berlin, Vienna, St. Petersburg) in the fin-de-siecle period (1870-1914). Course follows a seminar (reading and discussion) format. Honors students will undertake two small projects that go beyond the basic course requirements.

HIST427 - World War I 427-3 World War I. The first World War (1914 - 1918) from a variety of perspectives, with emphasis on cultural, social and political. Seminar-type format with discussions of topics such as the war's causes, nature of trench warfare, the home front, and political and cultural impact of the war. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST427H - World War I 427H-3 World War I. The first World War (1914-1918) from a variety of perspectives: military, cultural, social, and political. Some of the topics covered will be: the war's causes, the nature of trench warfare, the home front, political/cultural impact of the war. Course follows a seminar (reading and discussion) format. Honors students will undertake two small projects that go beyond the basic course requirements.

HIST429 - Political Violence Modrn World 429-3 Political Violence in the Modern World. This course will look at various forms of state and political violence in the 19th and 20th centuries. We will start with the "Reign of Terror" in the French Revolution, then look at the rise of terrorism in the later 19th century. The course will also cover state violence in the 20th century such as WWI, the Shoah, and the GULag. We will examine the "logic" and justification of both state and non-state political violence. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST437 - Lesbian and Gay History 437-3 Lesbian and Gay History in the Modern United States. (Same as WGSS 437) This course explores the social, political, and cultural history of lesbians, gay men, and other sexual and gender minorities in the United States from the turn of the twentieth century to the present. Themes to be taken up in the class include: the emergence of heterosexuality and homosexuality as distinct categories of identity; the intersection between sexual identity and identities of race, class, gender, and ethnicity; the relationship between homosexuality and transgenderism; the movement for gay liberation; the creation of lesbian and gay urban and rural subcultures; representations of homosexuality in popular culture; anti-gay backlash; and AIDS.

HIST442 - Victorian Britain 442-3 Victorian Britain: Politics, Society, and Culture. An examination of British politics, society, and culture examining political transformations from the Glorious Revolution to the Great War, industrialization and the emergence of a class society, Ireland and the British Empire in British culture, and Victorian culture. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST444 - The Holocaust 444-3 The Holocaust. An introduction to Nazi German's systematic mass murder of Europe's Jews and other minorities. Using works of history, literature, and film, we will examine such topics as anti-Semitism, the behavior of "ordinary Germans" during the 30s and 40s, Jewish resistance, Holocaust denial and memory after the Holocaust.

HIST445 - Science & Criminals Latin Amer 445-3 Science, Crimes, and Criminals in Latin America. This course introduces students to theories, concepts, and the history of crimes, criminals, and scientists in Latin America. It will address the social construction of crime, criminals, and criminality to show the way

in which different Latin American societies, and their respective histories viewed, described, defined, and reacted to "criminal" behavior.

HIST447 - Culture and the British Empire 447-3 Culture and the British Empire. This course will focus on the culture of modern British imperialism. It will examine the impact that the people and commodities of the empire as well as the practices of imperial rule had on modern British culture. The emphasis of the course will be on the implications of "imperial culture" in mediating gender, race, and class relations within the broader empire as well as contemporary Britain. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST447H - Culture and the British Empire 447H-3 Culture and the British Empire. This course will focus on the culture of modern British imperialism. It will examine the impact that the people and commodities of the empire as well as the practices of imperial rule had on modern British culture. The emphasis of the course will be on the implications of "imperial culture" in mediating gender, race, and class relations within Britain and its various colonies between the seventeenth and mid-twentieth centuries. Students taking the course for honor's credit will write all five of the review essays on the readings of the course as well as take a more active role in preparing discussion questions and leading class discussions.

HIST448 - Gender/Family Modern US Hist 448-3 Gender and Family in Modern U.S. History. (Same as WGSS 448) This course explores the history of gender and the family in the United States from the late 19th century to the present. Themes to be explored include: the family and the state, motherhood, race and family life, and the role of the "family" in national politics.

HIST450A - Colonial America 450A-3 Colonial America. The evolution of American society from European settlement through the Age of Jefferson, with special emphasis on social and political institutions and thought.

HIST450B - American Revolution 450B-3 American Revolution. The evolution of American society from European settlement through the Age of Jefferson, with special emphasis on social and political institutions and thought.

HIST451 - Antebellum America 451-3 Antebellum America. The struggle to define the nation in the political, economic and social realms; the emergence of women's rights, slavery, sectional conflict from 1815 to 1860.

HIST452 - The Civil War & Reconstruction 452-3 The Civil War and Reconstruction. The study of the background to the Civil War, the Civil War, Reconstruction, and the Gilded Age.

HIST455 - American Conservatism 455-3 The Conservative View in American History. Readings in American conservative thought, from the eighteenth-century to the present day, including traditionalist, neoconservative and libertarian writers. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST455H - Conservative View Amer History 455H-3 The Conservative View in American History. In addition to the regularly assigned readings, students on the Honors track of HIST 455 will meet with the instructor to read and write an extended essay with a focus on one particular aspect of conservative and libertarian intellectual history. The Honors paper must be focused, thoughtful, and based on wide reading of the subject. Required length: 15-20 pages.

HIST457 - American Environmental History 457-3 American Environmental History. (Same as GEOG 457) An exploration of the attitudes toward and the interaction with the natural resource environment of North America by human settlers. Coverage from the Neolithic Revolution to the present.

HIST458 - Bantu Diasporas 458-3 Bantu Diasporas in Africa & the Atlantic World. (Same as AFR 458) This course examines the origins and development of Bantu language and culture groups in Africa and the Atlantic World from the first dispersal of Bantu-speaking people thousands of years ago through the end of slavery in the Americas. Additionally, the course explores the multiple methods and disciplines used to construct histories of Bantu language and culture groups.

HIST460 - Slavery & The Old South 460-3 Slavery and The Old South. (Same as AFR 460) This course examines slavery and southern distinctiveness from the colonial period to 1861. Discussion topics include the plantation system, race relations, women and slavery, and southern nationalism.

HIST461 - Black Ams on Western Frontier 461-3 Black Americans on the Western Frontier. (Same as AFR 461) This course examines the history of African Americans in the American West. Taking both a chronological and thematic approach, it begins with a discussion of early black explorers in the age of encounter, and ends with a focus on black western towns established in the United States by the 1880's.

HIST464 - American Capitalism 464-3 History of American Capitalism. This course examines the growth of the American economy, economic thought, the evolution of the firm, and the changing place of women and minorities in American business society. It also explores the intersection between business and other institutions in American life, including labor, law, literature, government, education and religion. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

HIST465 - History of Sexuality 465-3 History of Sexuality. (Same as WGSS 465) Comprehensive survey of sexuality from the early modern period to the present. Examines social trends, politics, and cultural debates over various forms of sexuality. Students will engage in discussion, research, and writing. Areas of emphasis vary by instructor.

HIST466A - Trans-Appalachian Frontier 466A-3 History of the American West-Trans-Appalachian Frontier. The American frontier and its impact on American society from the colonial period to the 20th century.

HIST466B - Trans-Mississippi Frontier 466B-3 History of the American West-Trans-Mississippi Frontier. The American frontier and its impact on American society from the colonial period to the 20th century.

HIST467A - American Thought to 1865 467A-3 History of American Thought to 1865. Major themes include Puritanism, the Enlightenment, Romanticism, Darwinism, Pragmatism, Voices of Discontent, Neo-orthodoxy, liberalism, conservatism and formulating the modern conscience. Approved as Writing-Across-the-Curriculum course.

HIST467B - American Thought Since 1890 467B-3 History of American Thought Since 1890. Major themes include Puritanism, the Enlightenment, Romanticism, Darwinism, Pragmatism, Voices of Discontent, Neo-orthodoxy, liberalism, conservatism and formulating the modern conscience. Approved as Writing-Across-the-Curriculum course.

HIST470 - Latin Amer-Continuity & Change 470-3 Continuity and Change in Latin America. An in-depth examination of major topics in the history of Latin America since pre-Columbian times, especially themes that have been prominent in recent scholarship. Lectures will be supplemented by outside readings and class discussion.

HIST471 - History of Modern Japan 471-3 History of Modern Japan. An examination of Japanese History from the early Tokugawa period to the present. Major topics include the creation of the Japanese bureaucracy, commercialization and industrialization, and cultural experimentation.

HIST473 - Comparative Slavery 473-3 Comparative Slavery. (Same as AFR 473) A comparative study of slavery from antiquity to its abolition in the 19th century with the differing socio-cultural, political and economic contexts; organized chronologically, regionally and thematically.

HIST478 - Southern Africa, 1650-1994 478-3 Southern Africa, 1650-1994. (Same as AFR 478) An examination of Southern African history with emphasis on South Africa from 1652 to 1994. Topics to be covered include conflicts and wars, migrations and state formations, the economics of minerals, industrialization and the Anglo-Boer War, intertwined histories of race relations, the politics of exclusion and apartheid, and the making of modern South Africa.

HIST479 - The Cultural Revolution 479-3 The Cultural Revolution. This course explores the origins, major developments, and social, economic, cultural and psychological legacies of the Great Proletarian Cultural Revolution in China from 1966 to 1976 by critically examining relevant official documents, personal memories, oral histories, literary and artistic works, and films and material objects. All required

readings are in English. Open to both graduate students and advance undergraduate students. Prior knowledge of modern Chinese history helpful but not required.

HIST480A - History of China 1350-1890 480A-3 History of China-Late Imperial China, 1350 to 1890. An in-depth examination of political, economic, social and cultural history of China from 1350 to 1890. Examines the imperial state, gentry and peasants, commercialization and social change in China from 1350 to 1890.

HIST480B - History of China 1890-Present 480B-3 History of China-Twentieth Century China, 1890 to the present. An in-depth examination of political, economic, social and cultural history of China from 1890 to the present. Focuses on nation building, ideology and rural-urban culture in 20th Century China.

HIST485 - Revolutions Middle East 485-3 Revolutions in the Middle East. (Same as HIST 485H) This class examines aspects of revolutions and revolutionary attempts in the history of the modern Middle East. Recognizing revolution as a global phenomenon, it begins by considering a variety of historical and theoretical approaches to understanding revolutions. It asks questions such as what constitutes a revolution, what contexts and causes lead to revolutions, and what effects revolutions engender. It then examines revolutions in the modern Middle East more closely by focusing on several specific cases such as the Ottoman and Iranian constitutional revolutions, the secular revolutionary experiment in early twentieth-century Turkey, attempts at a socialist revolution in the Arab world, the Islamic Revolution in Iran, and the Arab Spring. Not open to freshmen.

HIST485H - Revolutions Middle East 485H-3 Revolutions in the Middle East. (Same as HIST 485) This class examines aspects of revolutions and revolutionary attempts in the history of the modern Middle East. Recognizing revolution as a global phenomenon, it begins by considering a variety of historical and theoretical approaches to understanding revolutions. It asks questions such as what constitutes a revolution, what contexts and causes lead to revolutions, and what effects revolutions engender. It then examines revolutions in the modern Middle East more closely by focusing on several specific cases such as the Ottoman and Iranian constitutional revolutions, the secular revolutionary experiment in early twentieth-century Turkey, attempts at a socialist revolution in the Arab world, the Islamic Revolution in Iran, and the Arab Spring. Honors students will complete an extra project for the course. Not open to freshmen.

HIST486 - Arab-Israeli Conflict 486-3 Arab-Israeli Conflict. This course focuses on the background to, and current dimensions of, the continuing conflict between Israel, the Palestinians and the rest of the Arab world. Beginning with origins of Zionism in the late nineteenth century, it examines, the foundation of Israel, Palestinian responses, and relations between Israel and its Arab neighbors.

HIST487 - Civil Rights Movement 487-3 The U.S. Civil Rights Movement. (Same as AFR 497) This course provides an overview of the history of the Civil Rights Movement while engaging major debates in the field of Black Freedom Studies. Central themes will include the impact of the Cold War, the roles of women, and the relationship of civil rights to black power. We will also discuss the difference between popular memory and historical scholarship as well as the meaning of such discussions for contemporary issues of racial and economic justice.

HIST488 - Islamic Political Movements 488-3 Islamic Political Movements. This course examines the use of Islamic ideals and rhetoric in social and political movements in the Middle East from the nineteenth century to the present. It focuses on political parties such as the Muslim Brotherhood in Egypt, the Welfare Party in Turkey, and Hamas in Palestine.

HIST489 - Women State Relign in Mid East 489-3 Women, State and Religion in the Middle East. (Same as WGSS 489) Following an introduction to the question of women in Islamic law and Islamic history, this course will examine the changing status and experiences of women in a number of Middle Eastern countries in the 20th century, focusing on Egypt, Iran, and Turkey. Major themes will include legal, social and political rights, participation in social and economic life, cultural and literary production, and recent secular and Islamist women's movements.

HIST490 - Special Readings in History 490-1 to 4 Special Readings in History. Supervised readings for students with sufficient background. Registration by special permission only.

HIST491 - Historiography 491-3 Historiography. Writings of historians from Herodotus to the present.

HIST493 - Topics in History 493-1 to 6 Topics in History. Topics vary with instructor. May be repeated for a maximum of six semester hours provided registrations cover different topics. Topics announced in advance.

HIST495 - History Honors 495-4 History Honors. Principles of historical method, research, and writing for senior honor students only. Not for graduate credit. Special approval needed from the department.

HIST496A - Internship in History 496A-1-9 Internship in History. Supervised field work in public or private agencies or operation where history majors are frequently employed, such as archives and libraries, government offices, communications media, historic sites, and museums. Only three hours may be applied to the major and six hours toward the M.A. degree. Special approval needed from the instructor.

HIST496B - Internship in Local History 496B-1-9 Internship in Local History. (Same as ARC 434) Field experience in research and preservation related to regionally and nationally recognized historic sites in southern Illinois. Special approval needed from the instructor.

HIST497 - Restoration & Archives 497-3 Historical Museums, Sites, Restorations and Archives. The development of museums from antiquity to the present, with emphasis on the United States. Additional topics include historical sites such as battlefields, historic buildings, restorations, monuments and archives. Also examines the purposes and functions of the museum and the tasks of professionals employed in museums or interpretative centers. Given in cooperation with the University Museum.

HIST498 - Oral History and Media 498-3 Oral History, Storytelling and Media. (Same as RTD 455) This course will develop an appreciation of the field of oral history, methodological concerns, and applications. Students will learn about the oral history process, including interview preparation and research, interview technique, the nature and character of evidence, transcribing, and legal and ethical concerns. Restricted to Junior or Senior standing.

HIST499 - Senior Seminar in History 499-3 Senior Seminar in History. Seminar for senior undergraduate students to examine in-depth a particular historical topic. Topics will vary with instructors. Students will engage in discussion, and produce a research paper. Not for graduate credit. Open to history majors only. May not be taken more than twice without completion. Fulfills the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: HIST 392.

HIST500 - The Historian's Craft 500-3 The Historian's Craft. Examination of historical methodology and recent trends in historiography. How historians conduct research and convey the results of it. Special treatment of selected topics of historiography. Required of M.A. degree students. Ph.D. degree students should consult graduate advisers.

HIST501 - Recent Historiography 501-4 Recent Historiography. Trends in historical writing and historical interpretation in the 20th Century. Required of M.A. degree students. Ph.D. degree students should consult graduate advisers.

HIST522 - Colloquium in European History 522-4-8 (4 per semester) Colloquium in European History. Group reading and discussion about major periods, subregions and themes in European history. May be repeated as instructors and topics vary.

HIST523 - Research Sem in European Hist 523-4 to 20 (4 per semester) Research Seminar in European History. Research and writing on selected topics in European history. Students will prepare a major paper. May be repeated as topics and instructors vary.

HIST551 - Colloquium Middle East History 551-4-8 (4 per semester) Colloquium in Middle East History. Group reading and discussion about major periods, subregions, and themes in the history of the Middle East and the Islamic world. May be repeated as topics vary.

HIST552 - Seminar Middle East History 552-4-8 (4 per semester) Research Seminar in Middle East History. Research and writing on selected topics in the history of the Middle East and the Islamic world. Students will prepare a major paper. May be repeated as topics vary.

HIST554 - Colloquium in U. S. History 554-4 to 8 (4 per semester) Colloquium in United States History. Group reading and discussion about major periods, subregions and themes in United States history. May be repeated as instructors and topics vary.

HIST555 - Research Seminar in U.S. Hist 555-4 to 20 (4 per semester) Research Seminar in United States History. Research and writing on selected topics in United States history. Students will prepare a major paper. May be repeated as topics and instructors vary.

HIST570 - Research Sem in Latin America 570-4 to 12 (4 per semester) Research Seminar in Latin American History. Research and writing on selected topics in Latin American history. Students will prepare a major paper. May be repeated as topics vary.

HIST571 - Colloquium in Latin Amer Hist 571-4-8 (4 per semester) Colloquium in Latin American History. Group reading and discussion about major periods, subregions and themes in Latin American history. May be repeated as instructors and topics vary.

HIST580 - Reserch Seminar in Asian Hist 580-4 to 12 (4 per semester) Research Seminar in Asian History. Research and writing on selected topics in Asian history. Students will prepare a major paper. May be repeated as topics vary.

HIST581 - Colloquium in Asian History 581-4-8 (4 per semester) Colloquium in Asian History. Group reading and discussion about major periods, subregions and themes in Asian history. May be repeated as instructors and topics vary.

HIST582 - Colloquium in World History 582-4-8 (4 per semester) Colloquium in World History. Group reading and discussion about major periods, subregions and themes in world history. May be repeated as instructors and topics vary.

HIST583 - Res Seminar World History 583-4 to 12 (4 per semester) Research Seminar in World History. Research and writing selected topics in World History. Students will prepare a major paper. May be repeated as topics vary.

HIST584 - Colloquium Comparative History 584-4-8 (4 per semester) Colloquium in Comparative History. Group reading and discussion relating to cross cultural or other comparative approaches in history. May be repeated as instructors and topics vary.

HIST585 - Research Sem in Comp Hist 585-4 to 8 (4,4) Research Seminar in Comparative History. Research on selected topics employing cross-cultural or other comparative approaches. Students will prepare a major paper. May be repeated as topics vary.

HIST586 - Colloquium in African History 586-4-8 (4 per semester) Colloquium in African History. Group reading and discussion about major periods, subregions and themes in African history. May be repeated as instructors and topics vary.

HIST587 - Research Seminar African Hist 587-4 to 12 (4 per semester) Research Seminar in African History. Research and writing on selected topics in African history. Students will prepare a major paper. May be repeated as topics vary.

HIST590 - Readings in History 590-1 to 8 (1 to 3 per semester) Readings in History. Individual readings. Registration by special permission only. Student must obtain the consent of the faculty member involved. M.A. degree students are limited to a maximum of 4 hours toward the 30-hour requirement. Graded S/U only. Registration by special permission only.

HIST596 - Tutorial in History 596-3 Tutorial in History. Research and writing in history in close consultation with an instructor to produce a major paper on a selected topic. This course may count toward graduation as a seminar and the paper will be placed on file in the Department of History. Students may take this course only once at the M.A. level and once at the Ph.D. level. Special approval needed from the director of graduate studies.

HIST597 - Practicum Teach College Hist 597-1 to 9 (1 to 3 per semester) Practicum in Teaching College-Level History. Students will learn how to lead discussion sections and/or to teach independent courses at the college level. M.A. or Ph.D. students assigned for the first time as a discussion leader must

take this course. The course also is required for Ph.D. students who are teaching their own courses for the first time. Graded S/U only. Restricted to graduate students in history. Special approval needed from the director of graduate studies.

HIST598 - Graduate Internship History 598-1 to 9 Graduate Internship in History. Supervised field work in occupationally related fields in public history, teaching, university publishing, historical editing. Programs of field work will be designated by students in consultation with their advisory committees. Students at the Ph.D. level can take as many as 9 hours in the course of their studies. Graded S/U or DEF.

HIST599 - Thesis 599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree.

HIST600 - Dissertation 600-1 to 30 (1 to 16 per semester) Dissertation.

HIST601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

HIST699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

History Faculty

Allen, Howard W., Professor, Emeritus, Ph.D., University of Washington, 1959.
Allen, James S., Professor, Ph.D., Tufts University, 1979.
Argersinger, Jo Ann E., Professor, Ph.D., The George Washington University, 1980.
Argersinger, Peter H., Professor, Emeritus, Ph.D., University of Wisconsin, 1970.
Batinski, Michael C., Professor, Emeritus, Ph.D., Northwestern University, 1969.
Bean, Jonathan J., Professor, Ph.D., The Ohio State University, 1994.
Bengtson, Dale R., Assistant Professor, Emeritus, Ph.D., Hartford Seminary Foundation, 1971.
Benti, Getahun, Associate Professor, Ph.D., Michigan State University, 2000.
Brown, Ras Michael, Associate Professor, Ph.D., University of Georgia, 2004.
Carr, Kay J., Associate Professor, Emeritus, Ph.D., University of Chicago, 1987.
Carrott, M. Browning, Associate Professor, Emeritus, Ph.D., Northwestern University, 1966.
Conrad, David E., Professor, Emeritus, Ph.D., University of Oklahoma, 1962.
Detwiler, Donald S., Professor, Emeritus, Dr. Phil., Göttingen University, Germany, 1961.
Dotson, John E., Professor, Emeritus, Ph.D., Johns Hopkins University, 1969.
Fanning, Charles F., Professor, Emeritus, Ph.D., University of Pennsylvania, 1972.
Gold, Robert L., Professor, Emeritus, Ph.D., University of Iowa, 1964.
Haller, John S., Professor, Emeritus, Ph.D., University of Maryland, 1968.
Hurlburt, Holly S., Professor, Ph.D., Syracuse University, 2000.
Lieberman, Robbie, Professor, Emeritus, Ph.D., University of Michigan, 1984.
Murphy, James B., Associate Professor, Emeritus, Ph.D., Louisiana State University, 1968.
Najar, José, Assistant Professor, Ph.D., Indiana University, 2012.
O'Day, Edward J., Associate Professor, Emeritus, A.M., Indiana University, 1956.
Shelby, Lon R., Professor, Emeritus, University of North Carolina, 1962.
Sramek, Joseph, Associate Professor, Ph.D., City University at New York, 2007.
Stocking, Rachel L., Associate Professor, Ph.D., Stanford University, 1994.
Weeks, Theodore, Professor, Ph.D., University of California-Berkeley, 1992.
Werlich, David P., Professor, Emeritus, Ph.D., University of Minnesota, 1968.
Whaley, Gray, Associate Professor, Ph.D., University of Oregon, 2002.
Wiesen, Jonathan, Professor and Chair, Ph.D., Brown University, 1997.
Wilson, David L., Professor, Emeritus, Ph.D., University of Tennessee, 1974.
Yilmaz, Hale, Associate Professor, University of Utah, 2006.
Zaretsky, Natasha, Associate Professor, Ph.D., Brown University, 2002.

Human Nutrition and Dietetics

Nutrition is an exciting and expanding field. In fact, according to the US Bureau of Labor Statistics, this field is expected to grow at a faster rate compared to other careers. The study of Human Nutrition exemplifies the intricate relationships between diet, health, and disease. The Human Nutrition & Dietetics (HND) major is part of the Department of Animal Science, Food, and Nutrition (ASFN) and offers three specializations: Dietetics/Pre-Nursing (DPN); Nutrition for Wellness Specialization (NW); Dietetics (DPD); Didactic Program in Dietetics (DPD); and Nutrition for Wellness (NW). Admission to the HND major follows general undergraduate admission requirements outlined in this catalog.

DIDACTIC PROGRAM IN DIETETICS SPECIALIZATION (DPD)

The DPD specialization is designed specifically for those wanting to become registered dietitians (RD). The first step to become a registered dietitian (RD) and/or licensed dietitian/nutritionist (LDN) in the State of Illinois requires successful completion of an ACEND-accredited DPD program. To become a RD or LDN the following qualifications apply:

1. Baccalaureate degree or post-baccalaureate degree in human nutrition, food and nutrition, dietetics, food systems management, nutrition education, or equivalent from an accredited University.
2. 1200 hours of supervised practice in an ACEND-accredited Dietetic Internship to obtain RD status, and 900 hours of supervised practice to obtain LDN status.
3. Successful completion of a professional examination.
4. Continuing education.

The SIU DPD program is fully accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (The Academy), 120 South Riverside Plaza, Suite 2190, Chicago, Illinois 60606-6995, phone (312) 899-5400. As a DPD student it is of utmost importance that significant dietetic work experience (paid or volunteer), exceptional academic performance (overall GPA>2.85), and involvement in extracurricular activities are acquired.

All DPD students are required to maintain at least a 2.85 (on a 4.0 scale) cumulative GPA and a 3.0 in HND courses to remain in the DPD program. If a student's GPA drops below minimum requirements, they will be placed on departmental probation and have one semester to reestablish the minimum requirements (2.85 cumulative GPA and a 3.0 in HND courses). If a student is unable to reach the requirements within this time-frame, he/she will be transferred to the Nutrition for Wellness Specialization (NW). Once the desired GPA is obtained, readmission to the DPD program will be granted.

The DPD specialization is guided by an advisory committee comprised of practicing registered dietitians, food service managers, dietetic internship preceptors, and educators who provide expertise to ensure a curriculum that meets ACEND Standards of Education as well as fully prepares graduates to apply for admission into a DI or ISPP. Employment opportunities for RDs have grown exponentially over the past couple of decades. In addition to traditional careers in dietetics (clinical, management, and community), non-traditional careers such as nutrition coaching, corporate dietetics, wellness, private practice, education, government/politics, book authoring, and health promotion are just a few of the newer opportunities on the horizon. Additional information regarding this specialization can be found at coas.siu.edu/academics/bachelors/human-nutrition/didactic-program.

DIETETICS/PRE-NURSING SPECIALIZATION (DPN)

The DPD curriculum can be concurrently completed with the pre-nursing curriculum (see DPD description) and/or meet the open pre-professional programs requirements (science.siu.edu/advisement/health_advisement/information). This will allow HND students who plan to enter medical, dental, pharmacy, nursing, dietetics, or other health professions meet the pre-professional requirements to apply for admission (see corresponding sections in the Undergraduate Catalog for specific requirements). This specialization can also be combined with specific minors (e.g., Animal Science, Biological Sciences, Chemistry, Health Care Management, Kinesiology, Microbiology, Philosophy, Psychology, Zoology to mention a few). These options will allow HND students various career possibilities. Individuals wishing to provide nutrition counseling or medical nutrition therapy must be a Registered Dietitian and/or licensed in their state of residence.

NUTRITION FOR WELLNESS SPECIALIZATION (NW)

Interest in sports nutrition and wellness is rapidly growing. Employment may comprise working with a healthy, active, and highly competitive population, or pursuing to acquire or reestablish a dynamic, healthy lifestyle. Individuals aspiring to become Registered Dietitians must also complete the DPD specialization to qualify to apply for a post-baccalaureate DI or ISPP. Combining the DPD and NW specializations may require additional semesters and more than 120 credit hours. Individuals wishing to provide nutrition counseling or medical nutrition therapy must be a Registered Dietitian and/or licensed in their state of residence.

Bachelor of Science Degree in Human Nutrition and Dietetics, College of Agricultural Sciences

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Major in Human Nutrition and Dietetics	32
PSYC 102, MATH 108, UNIV 101I ¹	7
PLB 115/ZOOL 115	(3)
CHEM 140A, CHEM 140B ²	(3)+5
PHIL 104	(3)
MICR 201	4
QUAN 402, MATH 282, ABE 318, or PSYC 211	3-4
PHSL 201 and PHSL 208	4
HND 100, HND 101, HND 320, HND 356, HND 425, HND 475, HND 485	(2)+16
Additional Requirements for Didactic Program in Dietetics	49
AH 105	2
HND 321, HND 400, HND 410, HND 470, HND 472, HND 480	16
HTA 156, 206, HTA 360, HTA 373	11
MKTG 304	3
PSYC 323	3
Electives	11

Degree Requirements	Credit Hours
Additional Requirements for Dietetics/Pre-Nursing (DPN)	8
ZOOL 118 ³	(3)+1
PHSL 301	4
CMST 262	3
Electives	5
Additional Requirements for Nutrition for Wellness (NW)	49
AH 105	2
KIN 201	3
HTA 206	(1)
HED 311, HED 312	6
HND 321, HND 410, HND 445, HND 495	12
Approved Electives	25
Total	120

1 The numbers in parentheses are counted as part of the 39-hour University Core Curriculum. MATH 109, MATH 111 or MATH 150 may be substituted.

2 CHEM 200/CHEM 201 or CHEM 210/CHEM 211 may be substituted.

3 Replaces ZOOL 115/PLB 115.

Human Nutrition and Dietetics Courses

HND100 - Careers in Dietetics 100-1 Careers in Dietetics. Overview of the diverse career options in dietetics from the perspective of guest speakers, readings, and assignments. Required courses and skills that characterize the dietetic professional will be reviewed. Restricted to HND major or consent of instructor.

HND101 - Personal Nutrition 101-2 Personal Nutrition. (University Core Curriculum) This course integrates nutrition and promotion of health through prevention of disease and will answer questions found daily in the media regarding nutrition. Topics emphasized are functions of basic nutrients, impact of culture, gender, ethnicity, social environments and lifestyle on nutrition and health.

HND206 - Food Service Sanitation 206-1 Food Service Sanitation. (Same as HTA 206) Basic sanitation principles and application in food service. Employee sanitation training, sanitation standards and safety regulations in the food service will be part of the course. Upon completion of the course, students will be eligible for the sanitation certificate national exam. Grade of C or better required.

HND215 - Introduction to Nutrition 215-2 Introduction to Nutrition. (Same as ANS 215) An up-to-date study of basic principles of nutrition including classification of nutrients (physical and chemical properties) and their uses in order to provide the student a working knowledge of nutrition in today's environment.

HND247A - School Lunch Program-Purchase 247A-1 The School Lunch Program-Food Purchasing.

HND247B - School Lunch Program-Qty Fd Pr 247B-1 The School Lunch Program-Quantity Food Production.

HND247C - School Lunch Program-Nutr Prac 247C-1 The School Lunch Program-Nutrition Practices in the School Lunchroom.

HND256 - Science of Food 256-5 Science of Food. Application of scientific principles including preparation, chemistry, functions, and interrelationships in ingredients and their effects on physical, chemical, and sensory characteristics of foods. Three lectures and two three-hour laboratories per week. Prerequisite: CHEM 140A or 200 and 201.

HND320 - Foundations Human Nutrition 320-3 Foundations of Human Nutrition. Principles of human nutrition in relation to intermediary metabolism and the role of vitamins and minerals. Prerequisite: HND 101, CHEM 140A or CHEM 200 and 201.

HND321 - Nutrition Care Process 321-3 Nutrition Care Process in Practice. Application of the nutrition care process to assess nutrition status, formulate nutrition diagnosis, create intervention strategies such as meal plans, foster counseling skills, and monitor health outcomes. Prerequisite: HND 320 or equivalent. Restricted to HND major.

HND356 - Experimental Foods 356-3 Experimental Foods. Experimental approach to the study of food science including factors influencing the interrelationships of ingredients and their effects on physical, chemical, and sensory characteristics of food. Prerequisites: HND/HTA 206 or sanitation certification, HND/HTA 360. Lab fee: \$30.

HND360 - Quantity Food Production 360-4 Quantity Food Production. (Same as HTA 360) Basic principles of foodservice management and its application to volume food production, menu development, food safety, procurement, kitchen equipment, customer service, marketing and finance will be covered during the semester. A basic cooking lab will provide hands-on experience in food preparation. A grade of C or better required. Prerequisite: HTA 202, HTA 206 or HND 206 or concurrent enrollment. Restricted to sophomore standing. Lab fee: \$30.

HND371 - Field Experience 371-2 Field Experience. Opportunity for supervised learning experiences in the student's major. Restricted to food and nutrition majors only, sophomore status. Special approval needed from internship coordinator.

HND373 - Food & Labor Cost Control 373-3 Food and Labor Cost Control. (Same as HTA 373) Examination of the managerial responsibilities of the food and beverage manager in the hospitality operation. Management methods in budgeting, forecasting, cost control, and establishing operational policies and systems. A grade of C or better required. Prerequisites: HTA 206 or HND 206 or concurrent enrollment. Restricted to sophomore standing. Lab fee: \$30.

HND390 - Special Studies in HND 390-1 to 4 Special Studies in Human Nutrition and Dietetics. Enables students to pursue personal research interests in the human nutrition and dietetics area. Restricted to juniors and seniors only. Special approval needed from the department.

HND400 - Career Development 400-1 Career Development. Review of the post-baccalaureate accredited Internship Program application process. Not for graduate credit. Prerequisite: HND 100. Restricted to senior status.

HND410 - Nutrition & Wellness Ed 410-3 Nutrition and Wellness Education. This course explores research, theories and practices that influence human health behavior. Educational principles associated with behavior change including health literacy, assessing populations at risk, and designing effective health communication strategies are examined. Theories to explain human behavior, such as the Health Belief Model, Social Cognitive Theory, Transtheoretical Model, and Social Ecological Model will be

studied, particularly as they relate to health education programming and how individual behavior is influenced. Prerequisite: HND 321.

HND420 - Recent Developments Nutrition 420-3 Recent Developments in Nutrition. Critical study of current scientific literature in nutrition. Prerequisite: HND 320.

HND425 - Nutrition Biochemistry 425-3 Biochemical Aspects in Nutrition. (Same as ANS 425) The interrelationship of cell physiology, metabolism and nutrition as related to energy and nutrient utilization, including host needs and biochemical disorders and diseases requiring specific nutritional considerations. Prerequisite: ANS 215 or HND 320, CHEM 140B, PHSL 201 and 208.

HND445 - Nutr for Sport & Exercise 445-3 Nutrition for Sport and Exercise. This course presents the metabolic and physiologic basis for macronutrient and micronutrient requirements during training, competition/performance, and recovery. The course begins with a brief overview of nutrition and exercise metabolism, followed by examination of nutritional requirements for sport and exercise, and concluding with a discussion of the practical aspects of nutrition related to athletes and exercise enthusiasts. Restricted to Junior, Senior, or Graduate Standing or permission of instructor.

HND461 - Service Organization & Mgmt 461-3 Service Organization and Management. (Same as HTA 461) Managerial aspects of the hospitality industry as related to provision of quality service. Organizational structures, management techniques, decision-making abilities, ethics, leadership, and human resource issues are examined. A grade of C or better required. Prerequisite: HTA 202, HTA 380 with a grade of C or better. Restricted to junior standing or consent.

HND470 - Medical Nutrition Therapy I 470-3 Medical Nutrition Therapy I. This is the first in a 2-course sequence of the study of pathophysiology and principles of medical nutrition therapy for various disease states. Application of Nutrition Care Process, nutrition screening and assessment, and medical record documentation. Prerequisite: HND 320, HND 321, AH 105, CHEM 140B, PHSL 201 and 208. Restricted to HND students.

HND472 - Medical Nutrition Therapy II 472-3 Medical Nutrition Therapy II. The continued study of pathophysiology and principles of medical nutrition therapy for various disease states. Application of Nutrition Care Process, nutrition screening and assessment, and medical record documentation. Prerequisite: HND 470. Restricted to HND majors.

HND475 - Nutrition Through Life Cycle 475-3 Nutrition Through the Life Cycle. This course will review nutrition during major phases of the life cycle. It will include units on: women's health during the preconception period pregnancy and lactation; infancy; childhood; adolescence; and older adults (65+). Students will complete life cycle projects and case studies for each phase of life throughout the course. Prerequisite: HND 320. Restricted to HND major.

HND480 - Community Nutrition 480-3 Community Nutrition. This course will provide a general foundation of Community Nutrition and how the Registered Dietitian/Community Nutritionist works in a community setting. This course will cover areas such as determining needs for nutrition education/intervention, public policy, supplemental nutrition programs, funding and grant writing. Prerequisite: HND 475. Restricted to HND major.

HND485 - Advanced Nutrition 485-3 Advanced Nutrition. This course applies advanced principles of biochemistry and physiology to expand on basic nutrition information and explains the role of nutrients from cellular and mechanistic aspects. Prerequisite: HND 320, 425.

HND490 - Practicum Sport Nutr & Welnes 490-3 Practicum in Sport Nutrition and Wellness. This is an opportunity to gain field experience in wellness and sports nutrition and collaborate with peers to share experiences and work through a variety of problems. It is a "capstone" course: one that brings together the theory, knowledge, and skills that you've gained through completion of the Nutrition curriculum that you may apply in a live setting. The goal of this course is to expose students to a variety of situations they may encounter in a wellness and/or sports nutrition profession. Restricted to senior standing or instructor approval.

HND495 - Nutrition and Obesity 495-3 Nutrition and Obesity. This course will examine the multifactorial etiology of obesity, its corresponding health consequences, and the role of diet in prevention and

treatment of obesity and its related comorbidities. At the end of this course, students will be able to (i) understand basic physiological and metabolic concepts underlying the development of obesity; (ii) discuss the health consequences of obesity across the lifespan; and (iii) describe the nutrition-related approaches for prevention and treatment of obesity. Prerequisite: HND 425 or concurrent enrollment.

Human Nutrition and Dietetics Faculty

Ashraf, Hea-Ran L., Professor, Emerita, Ph.D., Iowa State University, 1979.
Banz, William J., Professor, Ph.D., University of Tennessee, 1995.
Davis, Jeremy, Associate Professor, Iowa State University, 2008.
Davis, Nicole L., Instructor, Ph.D., Southern Illinois University, 2009.
Endres, Jeannette M., Professor, Emerita, Ph.D., St. Louis University, 1972.
Farrish, John, Assistant Professor, Ph.D., University of Nevada Las Vegas (UNLV), 2010.
Gill, Lynn, Instructor, M.S., Southern Illinois University Carbondale, 1996.
Green, Brenda Harsha, Instructor, M.S., Southern Illinois University, 2000.
Hasin, Afroza, Instructor, Ph.D., Southern Illinois University, 2015.
Null, Dawn Bloyd, Assistant Professor, Ph.D. Southern Illinois University, 2012.
Roth, Sara Long, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1991.
Smith, Sylvia F., Associate Professor, Ph.D., University of Tennessee, 2007.
Welch, Patricia, Professor, Emerita, Ph.D., Southern Illinois University, 1982.
Witrick, Katherine, Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 2012.

Horticulture

The horticulture major is administered through the Plant, Soil and Agricultural Systems department. The horticulture program includes three specialized areas of study.

The primary purpose of this major is: to provide specialized academic preparation in the different content areas of production horticulture, to provide the skills required for landscape design, construction and maintenance, and to provide the technical skills needed for professional turf management.

Production Horticulture Specialization. This specialization provides the student with the background and preparation for careers in production horticulture including vegetable, fruit and ornamental production, viticulture, garden center, greenhouse and nursery production, and tissue culture and propagation methodologies. Students may choose a general option within the department and select their upper division elective credits from a wide choice of courses throughout the College of Agricultural Sciences and the University. If interests are more specialized, students may elect the science option and specialize in a specific discipline.

Landscape Horticulture Specialization. Students selecting this specialization can prepare for interesting careers in landscaping parks, playgrounds, residential or industrial areas, road and street parkway improvement and maintenance to make the environment more pleasing and useful.

Turf Management Specialization. This specialization is intended for students interested in the technical management skills needed for professional turf management and the current strategies regarding environmental, social, political, and business issues within the turf industry.

Opportunities for individual program development within the various specializations/options may be realized through work experience, internships, special studies, and seminars; however, no more than 30 hours of such unstructured coursework may be counted toward the degree. Students in all specializations/options are urged to make use of them to meet the goals and needs of their respective programs.

Students in all specializations must complete the horticulture core. These courses are HORT 220, CSEM 240, one hour of HORT 381, and HORT 409.

There may be extra expenses for field trips, manual, or supplies in some courses.

Technology Fee. The College of Agricultural Sciences assesses the College of Agricultural Sciences undergraduate majors a technology fee of \$4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semesters.

Bachelor of Science Degree in Horticulture, College of Agricultural Sciences

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
To include MATH 108, CHEM 140A, PLB 200, UNIV 101 for additional four credit hours.	
Requirements for Major in Landscape Horticulture	36
Core Requirements - HORT 220, HORT 381, HORT 409, HORT 423, HORT 424, HORT 430, HORT 432, HORT 436 or HORT 466, HORT 437	31
HORT: 300- or 400-level classes.	7
Other required courses - CSEM 240	4
CHEM 140B ²	4
Business Course ³	3
Agricultural Sciences Electives 300-and 400-Level ⁴	10
Other Electives	18
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted. CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted.

2 CHEM 210 and CHEM 211 may be substituted.

3 Select one course from ACCT 210, ABE 333, FIN 200, FIN 300, MKTG 304, MGMT 304, MKTG 350, MGMT 350.

4 Choose any 300-level pr 400-level from ABE, AGRI, ANS, CSEM, HORT, HTA, HND, FOR.

Production Horticulture (General) Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include MATH 108, CHEM 140A, PLB 200, UNIV 101 for additional two credit hours. ¹	39+2
Requirements for Major	79

Degree Requirements	Credit Hours
Core Requirements HORT 220, HORT 381, HORT 409, HORT 423, HORT 424, HORT 430, HORT 432, HORT 436 or HORT 466, HORT 437	31
HORT: 300- or 400-level classes.	7
Other required courses - CSEM 240	4
CHEM 140B ²	4
Business Course ³	3
Agricultural Sciences Electives 300-and 400-Level ⁴	10
Other Electives	20
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted. CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted.

2 CHEM 210 and CHEM 211 may be substituted.

3 Select one course from ACCT 210, ABE 333, FIN 200, FIN 300, MKTG 304, MGMT 304, MKTG 350, MGMT 350.

4 Choose any 300-level or 400-level from ABE, AGRI, ANS, CSEM, HORT, HTA, HND, FOR.

Production Horticulture (Science) Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39+2
To include MATH 108, CHEM 140A, PLB 200, UNIV 101 for additional two credit hours. ¹	
Requirements for Major	79
Core Requirements: HORT 220, HORT 381, HORT 409, HORT 423, HORT 424, HORT 430, HORT 432, HORT 436 or HORT 466, HORT 437	31
HORT: 300- or 400-level classes.	7
Other required courses: CSEM 240	4
CHEM 210, CHEM 211, CHEM 340, CHEM 341, CHEM 350	12
MATH 109 ²	3

Degree Requirements	Credit Hours
PHYS 203A, PHYS 203B	6
Business Course ³	3
Agricultural Sciences Electives 300- and 400-level ⁴	6
Other Electives	7
Total	120

1 MATH 106, MATH 125, may be substituted. Any UNIV 101 may be substituted. MATH 111, MATH 140 or MATH 150 may be substituted.

2 MATH 111, MATH 140 or MATH 150 may be substituted.

3 Select one course from ACCT 210, ABE 333, FIN 200, FIN 300, MKTG 304 MGMT 304, MKTG 350 MGMT 350

4 Choose any 300- or 400-level from ABE, AGRI, AGSE, ANS, CSEM, HORT, HTA, HND, FOR

Landscape Horticulture Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39+2
To include MATH 108, CHEM 140A, PLB 200, UNIV 101I for an additional two credit hours ¹	
Requirements for Major	79 or 80
Core Requirements: HORT 220, HORT 324 or HORT 326, HORT 327, HORT 328A, HORT 381, HORT 409, HORT 430, HORT 431, or HORT 434.	23 or 24
HORT 400-level	4 or 5
HORT: 300- or 400-level classes	21
Other required courses: CSEM 240	4
CHEM 140B ²	4
Business Course ³	3
Agricultural Sciences Electives ⁴	9
Other Electives	10
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted. CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted.

2 CHEM 210 and CHEM 211 may be substituted.

3 Select one course from ACCT 210, ABE 333, FIN 200, FIN 300, MKTG 304, MGMT 304, MKTG 350, MGMT 350.

4 Choose any from ABE, AGRI, AGSE, ANS, CSEM, HORT, HTA, HND, FOR.

Production Horticulture Turf Grass Management Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39+2
To include MATH 1081, CHEM 140A2, PLB 200, UNIV 101I for an additional two credit hours ¹	
Requirements for Major	66-84
Core Requirements: HORT 220, HORT 332, HORT 359, HORT 381, HORT 409	11
HORT 359	1-6
HORT/CSEM: 300- and 400-level classes ²	20
Other required courses: CSEM 240, CSEM 401, CSEM 420, CSEM 447, CSEM 448, CSEM 468	18
CHEM 140B ³	4
ABE 333 or CMST 280	3
Business Course ⁴	3
Agricultural Sciences Electives 300- and 400-level ⁵	6
Other Electives	8-13
Total	120

1 MATH 106, MATH 109, MATH 125, MATH 140 or MATH 150 may be substituted. CHEM 200 and CHEM 201 may be substituted. Any UNIV 101 may be substituted.

2 Select from HORT 324, HORT 326, HORT 327, HORT 328A, HORT 328B, HORT 428, HORT 429, HORT 430, HORT 431, HORT 434 or CSEM 443

3 CHEM 210 and CHEM 211 may be substituted.

4 Choose one course from ACCT 210, ABE 333, FIN 200, FIN 300, MKTG 304, MGMT 304, MKTG 350, MGMT 350

5 Choose any 300- or 400-level from ABE, AGRI, AGSE, ANS, CSEM, HORT, HTA, HND, FOR

Horticulture Minor

A minor in Horticulture is offered. A total of 15 hours of credit is required with at least 12 hours taken at the University. HORT 220 is required and at least eight hours from 300- or 400-level structured courses. The department chair or coordinating counselor must be consulted before selecting this field as a minor.

Horticulture Courses

HORT220 - General Horticulture 220-4 General Horticulture. [IAI Course: AG 905] Introductory horticulture course that will provide students with a foundation for more advanced horticulture courses and an understanding of the growing and care of plants. The course is designed to acquaint students with the science, art and culture of producing the various horticultural crops. Prerequisite: PLB 200 or equivalent. Lab fee: \$50.

HORT225 - Genetics: Amateur Gardener 225-2 Genetics for the Amateur Gardener. An introduction to the essential principles of genetics and plant hybridization utilizing common garden and house plants.

HORT228 - Floral Arrangements 228-2 Floral Arrangements. Theory and practice in the art of flower and plant arrangement for the home, show, and special occasions. History, elements, and principles of design and the use of color. Lab Fee: \$75.

HORT238 - Home Gardening 238-2 Home Gardening. Gardening techniques for the home gardener including site selection, garden planning, utilization of compost and mulch, pest management, and container gardening. Both inorganic and organic gardening methods are discussed along with the latest recommended varieties for the small garden. Lab fee: \$25.

HORT257 - Work Experience 257-1 to 10 Work Experience. Credit for on-campus work experience in the areas of plant and soil science, or credit through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Credit awarded based on 4 hours of work per week during the semester for each hour of credit. Special approval needed from the department. Mandatory Pass/Fail.

HORT322 - Turfgrass Management 322-3 Turfgrass Management. Principles and methods of establishing and maintaining turfgrass for lawns, recreational areas, public recreation areas, public grounds and higher-management turf. Identification of plant species, soil properties, and management pertinent to variable environments. Prerequisite: a plant biology course, HORT 220. Lab fee: \$50.

HORT324 - Landscape Annuals 324-3 Landscape Annuals. Identification, classification, culture, and use of herbaceous annuals or plants treated as annuals in the landscape. Prerequisite: HORT 220. Lab fee: \$50.

HORT326 - Landscape Perennials 326-3 Landscape Perennials. Identification, classification, culture and use of herbaceous perennials, hardy bulbous plants, and perennial ornamental grasses in the landscape. Prerequisite: HORT 220. Lab fee: \$50.

HORT327 - Landscape Plant Materials 327-3 Landscape Plant Materials. Identification, usage and adaptability to the landscape of woody (deciduous and evergreen) and ornamental shrubs, trees and vines. Use of plant keys. Prerequisite: HORT 220. Laboratory fee: \$10.

HORT328A - Landscape Design 328A-2 Landscape Design. Introduction to the design process and components of landscape design (plant materials, pavement, site structures, water, landform and buildings). A brief history of landscape design is also explored.

HORT328B - Landscape Design Studio 328B-2 Landscape Design Studio. Practical application of landscape design beginning with basic graphic presentation and design skills leading to a final design of a real site. Distance learning course includes short video clips of "how to do." Lab fee: \$20.

HORT333 - From the Vine to its Wine 333-3 From the Vine to its Wine. Introduction to grape growing and the making, using and appreciation of wine for pleasure, health and profit. Discover the science

and art of growing, making and using wine. Participatory approach to instruction with emphasis on beginning the novice on a successful journey through the wonderful world of grapes and wine. Includes a Midwest perspective. A three-day tour of the regional industry and a Saturday tour of local establishments required. Must be 21 years of age by September 15 (prior to wine tasting exercises) of semester taken to enroll. Proof of age and signature on informed consent form required at first class meeting. Offered fall semester only. Purchase and use of required textbook mandatory. Lab fee: \$245.

HORT359 - Intern Program 359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agribusiness. Restricted to junior standing. Special approval needed from the department. Mandatory Pass/Fail.

HORT381 - HORT Seminar 381-1 to 2 (1,1) Plant and Soil Science Seminar. Discussion of special topics and/or problems in the various areas of plant and soil science. Prerequisite: Communication Studies 101. Restricted to junior standing.

HORT390 - Special Studies in HORT 390-1 to 8 Special Studies in Plant and Soil Science. Assignments involving research and individual problems. Special approval needed from the department.

HORT391 - Honors in HORT 391-1 to 4 Honors in Plant and Soil Science. Independent undergraduate research sufficiently important to three hours per week of productive effort for each credit hour. Special approval needed from the department.

HORT403B - Horticultural Crop Diseases 403B-2 Horticultural Crop Diseases. (Same as PSAS 403B) A survey of major diseases of important horticultural crops in the United States. Disease identification, cycles, and management strategies will be addressed. Not for graduate credit. Prerequisite: HORT 220.

HORT403C - Turfgrass Diseases 403C-1 Turfgrass Diseases. (Same as PSAS 403C) A survey of major diseases of important turfgrasses in the United States. Disease identification, cycles, and management strategies will be addressed. Not for graduate credit. Prerequisite: HORT 220.

HORT403D - Tree Diseases 403D-1 Tree Diseases. (Same as PSAS 403D) A survey of major diseases of important tree species in the United States. Disease identification, cycles, and management strategies will be addressed. Not for graduate credit. Prerequisite: HORT 220.

HORT409 - Crop Physiology 409-3 Crop Physiology. (Same as CSEM 409, PSAS 409) Principles of basic plant physiology. Topics include cell structure, photosynthesis, respiration, water and mineral relations, vascular transport and plant growth regulators. Prerequisites: PLB 200, CHEM 140B. Lab fee: \$50.

HORT421 - Turf Mgt Issues/Strategies 421-3 Turf Management Issues and Strategies. (Same as PSAS 421) Issues in environment, technology, management, society, politics, business, and sports that interact with turf management. Students will utilize periodicals and other references for preparing papers addressing these issues. Prerequisite: HORT 322 or permission of instructor. Lab fee: \$25.

HORT422 - Turfgrass Science & Pro Mgmt 422-3 Turfgrass Science and Professional Management. (Same as PSAS 422) Basic concepts of physiology, growth, and nutrition of turfgrasses and their culture. Application of turfgrass science to management of special areas, such as golf courses, athletic fields, sod farms, and to the turfgrass industry. Prerequisite: CSEM 240 and HORT 322. Lab fee: \$50.

HORT423 - Greenhouse Management 423-3 Greenhouse Management. (Same as PSAS 423) Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; greenhouse heating and cooling systems. Prerequisite: HORT 220. Lab fee: \$40.

HORT424 - Floriculture 424-4 Floriculture. (Same as PSAS 424) Production, timing, and marketing of the major floricultural crops grown in the commercial greenhouse. Each student will have an assigned project. Prerequisite: HORT 220. Lab fee: \$40.

HORT428 - Advanced Landscape Design I 428-3 Advanced Landscape Design I. (Same as PSAS 428) Development of the design process, graphics and verbal communication of landscape projects. Emphasis on large scale projects and residential design. Prerequisite: HORT 328A and 328B. Lab fee: \$25.

HORT429 - Advanced Landscape Design II 429-3 Advanced Landscape Design II. (Same as PSAS 429) Development of the design process, graphics and verbal communication of landscape projects. Emphasis on construction details, color rendering and portfolio development. Prerequisite: HORT 428. Lab fee: \$25.

HORT430 - Plant Propagation 430-4 Plant Propagation. (Same as PSAS 430) Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts, and other methods of propagation. Not for graduate credit. Prerequisite: HORT 220. Field trip cost approximately \$5. Lab fee: \$40.

HORT431 - Landscape Construction 431-4 Landscape Construction. (Same as PSAS 431) An introduction course in the basic elements of landscape construction dealing with wood, concrete, masonry, and stone. Emphasis will be placed on safety, interpretation of construction drawings, specifications for specific structures, materials selection, cost estimation, site preparation, and construction techniques. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$170.

HORT432 - Garden Center & Nursery Mgmt 432-4 Garden Center and Nursery Management. (Same as PSAS 432) Principles and practices in both fields and container production or ornamental landscape materials and the marketing of landscape plant materials at the nursery and retail garden center. Business management or both nurseries and garden centers will be included. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$50.

HORT433 - Intro to Ag Biotechnology 433-3 to 7 Introduction to Agricultural Biotechnology. (Same as AGSE 433, ANS 433, CSEM 433, PLB 433, PSAS 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer, and expression will be derived.

HORT434 - Landscape Maintenance Operns 434-3 Landscape Maintenance Operations. (Same as PSAS 434) Course is designed as a general introduction to landscape maintenance operations. Topics discussed include plant selection, site selection, climatic effects, planting, fertilization, pruning, diagnosis of plant problems, weed control and pest management. Emphasis given to business management practices and cost estimation skills. Not for graduate credit. Prerequisite: HORT 220.

HORT436 - Successful Fruit Growing 436-4 Successful Fruit Growing. (Same as PSAS 436) Learn how to grow and use temperate fruit trees for your pleasure and/or economic benefit. Learn to use the basic principles of plant-environment interaction to understand and solve common problems found in the culture of tree fruit crops in the landscape, garden or orchard. Master the secrets of fruit growing through emphasis on hands-on experiential laboratories. Focus on midwest culture of tree fruit and nut crops. One-day field trip. Required textbook mandatory. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$135.

HORT437 - Vegetable Production 437-4 Vegetable Production. (Same as PSAS 437) Culture, harvesting, and marketing of vegetables; with morphological and physiological factors as they influence the crops. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$25.

HORT439 - Landscape Design Software 439-3 Introduction to Landscape Design Software. (Same as PSAS 439) Introduces students to a popular software program used to create landscape designs. Emphasis is on learning the software program rather than learning the design process. Prerequisite: HORT 328A and HORT 328B.

HORT462 - Sustainable Landscape Practice 462-3 Sustainable Landscape Practices. (Same as PSAS 562) Landscape practices designed and maintained with respect to natural systems offer ecological benefits, functional solutions and aesthetic value to outdoor spaces. This course will introduce best practices and construction methods of sustainable landscape features as green roofs, green walls, and permeable pavers with an emphasis on construction details, material selection and case studies. Students will expand critical thinking skills as applied to landscape planning.

HORT463 - Plants in Ecological Landscape 463-3 Plants in the Ecological Landscape. (Same as PSAS 563) Introduction to alternative plant selections for the urban landscape associated with use of native

plants and creating edible landscapes. Emphasis is placed on site selection, whether in the ground, in containers or on a green roof, to determine best practices and appropriate plant choices in urban environments.

HORT466 - Vine & Small Fruit Culture 466-4 Vine and Small Fruit Culture. (Same as PSAS 466) Study of the developmental patterns and environmental responses of important vine and small fruit crops; strawberries, brambles, blueberries, grapes and exotic crops. Learn to adapt these crops to profitable culture for the amateur or professional with a Midwest focus. Practical hands-on experience in the classroom and the field. Two one-day field trips required. Required textbooks mandatory. Not for graduate credit. Prerequisite: HORT 220. Lab fee: \$150.

HORT467 - Wines of the World 467-3 Wines of the World. (Same as PSAS 467) Varieties, terroir, culture and connoisseurship. Study the impact of varieties, terroir and culture on important wines from regions around the world. Learn wine geography and its effect on wine character with practical hands-on experience and expand connoisseurship skills. A team approach to wine appellation presentations and a term project involved in the wine trade will teach industry production, marketing and networking skills. Meet once a week for 4 hours; 2 hr lecture, 2 hr lab. Meeting time arranged for convenience of majority interested in taking the class, with instructor approval. Prerequisite is successful completion of HORT 333, From the Vine to its Wine, with a grade of C or better. Must be 21 years of age prior to beginning of class to enroll. Proof of age and signature on informed consent form required at first class meeting. Purchase and use of required textbook mandatory. Laboratory fee of \$192.

HORT469 - Organic Gardening 469-3 Organic Gardening. (Same as PSAS 469) This class will focus on the philosophical background of organic farming, as well as the biological, environmental and social factors involved in organic food production. The student will learn the basic principles of successful organic gardening without the need to use man-made synthetic chemical sprays and fertilizers. Topics covered will include soils and organic fertilizers, composting and mulches, companion planting and crop rotation, organic cultivation of fruit, vegetable and ornamental flowers/shrubs, organic pest and disease control, permaculture, and organic garden planting design and maintenance.

HORT470 - Post Harvest Handling 470-2 Post Harvest Handling of Horticultural Commodities. (Same as PSAS 470) Fundamental principles of post harvest physiology, handling, and evaluation of horticultural commodities will be covered. Specific details will be given on vegetable, fruit, ornamental, and floricultural commodities. Not for graduate credit. Prerequisite: HORT 220 and PLB 320. Field trip costing approximately \$30.

HORT475 - Golf Course Green Instal/Maint 475-4 Golf Course Green Installation and Maintenance. (Same as PSAS 475) This course will focus on the requirements, installation, care and maintenance of the rooting media of golf course putting green and turfgrass on disturbed soils. Not for graduate credit. Prerequisite: CSEM 240.

HORT480 - Designing Outdoor Spaces 480-3 Designing Outdoor Spaces. (Same as PSAS 480) This course will instruct and challenge the student to design outdoor spaces that cultivate a sense of place as related to the site and the user. The course will review fundamental landscape planning process including principles and elements of design with an emphasis on "green" decision making. Special approval needed from the department.

Horticulture Faculty

Boren, Amy, Senior Lecturer, M.S., Southern Illinois University, 1980.

Diesburg, Kenneth, Assistant Professor, Emeritus, Ph.D., Iowa State University, 1987.

Gage, Karla, Assistant Professor, Ph.D., Southern Illinois University, 2013.

Henry, Paul H., Associate Professor, Ph.D., North Carolina State University, 1991.

Jones, K. L., Professor and Chair, Ph.D., Texas A&M University, 1999.

Midden, Karen L., Professor, M.L.A., University of Georgia, 1983.

Preece, John E., Professor, Emeritus, Ph.D., University of Minnesota, 1980.

Taylor, Bradley H., Associate Professor, Ph.D., Ohio State University, 1982.

Walters, S. Alan, Professor, Ph.D., North Carolina State University, 1996.

Hospitality and Tourism Administration

The Hospitality and Tourism Administration program is a part of the Department of Animal Science, Food and Nutrition. The Hospitality and Tourism Administration major offers an undergraduate program as preparation for careers in hospitality and tourism management.

The mission of the Hospitality and Tourism Administration undergraduate program is to provide educational, research, and service activities with the goal of enabling students, as well as industry and community professionals, to function in an ever-changing environment. The program integrates many disciplines that address ongoing concerns and needs of the hospitality and tourism industry.

The mission is accomplished through teaching a combination of relevant hospitality theory and practical solution-based examples using appropriate current technology. The purpose is to develop industry professionals able to contribute, through employment and entrepreneurship, to the economic growth of the hospitality and tourism industry.

The Hospitality and Tourism Administration major is accredited by ACPHA (Accreditation Commission for Programs in Hospitality Administration, P.O. Box 400, Oxford, MD, 21654, phone 416/226-5527).

Students will be required to take field trips in those courses so designated with the expenses pro-rated for each student. Appropriate uniforms will be required of all students enrolling in those courses that involve preparation of food.

Technology Fee

The College of Agricultural Sciences assesses College of Agricultural Sciences undergraduate majors a technology fee of \$4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semesters.

Bachelor of Science Degree in Hospitality and Tourism Administration, College of Agricultural Sciences

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
For Humanities, PHIL 104; PHIL 105 are recommended For Math, MATH 108 is recommended For Social Sciences, PSYC 102; ECON 113 are recommended	
Requirements for Major in Hospitality and Tourism Administration	81
Professional Core Requirement	12
ACCT 220; ISAT 229 or CS 200B; MKTG 304; QUAN 402 or ABE 318 or MATH 282 or PSYC 211 or SOC 308.	
Hospitality and Tourism Core Requirement	51
HTA 202, HTA 206, HTA 250, HTA 273, HTA 330, HTA 351, HTA 360, HTA 371*, HTA 373, HTA 380, HTA 400, HTA 435, HTA 445, HTA 440, HTA 461, HTA 465, and HTA 470. ¹	

Degree Requirements	Credit Hours
Approved Electives	18
Total	120

1 *One 6-hr. course or two 3-hr. courses

Professional Development Sequence (PDS) in Event Planning and Management

The PDS is meant to enhance the marketability of students who wish to pursue careers in meeting and special event planning. Enrollment in Hospitality and Tourism Administration is not required to complete the PDS. While the PDS itself does not lead to a degree, courses can be counted as approved electives toward the Hospitality and Tourism Administration degree. Students not wishing to pursue a baccalaureate must complete the unclassified undergraduate application.

Degree Requirements	Credit Hours
Requirements for PDS in Event Planning and Management	
HTA 250, HTA 255, HTA 350, HTA 355, HTA 450, HTA 455.	18

Professional Development Sequence (PDS) in Food and Beverage Management

The PDS program is meant to boost job opportunities for students interested in management of food and beverage operations. The benefits of this program include opportunities to learn while working, to enhance participant knowledge, and improve opportunities in the work place. It facilitates prospective students to transfer earned program credits to pursue a B.S. degree in Hospitality and Tourism Administration at SIU. The additional advantage is an opportunity to obtain National Restaurant Association 'ManageFirst' certification. Students not wishing to pursue a baccalaureate must complete the unclassified undergraduate application.

Degree Requirements	Credit Hours
Requirements for PDS program in Food and Beverage Management:	
Hospitality and Tourism Administration (HTA) HTA 206, HTA 335, HTA 360, HTA 373, HTA 380, HTA 460	18

Hospitality and Tourism Administration Courses

HTA156 - Multicultural Foods 156-3 Multicultural Foods. Exploration and understanding of food patterns and cultures of countries and regions throughout the world.

HTA202 - Intro to Hospitality & Tourism 202-3 Introduction to Hospitality and Tourism. Introduction to the diverse aspects of the hospitality and tourism industries and the interrelationships between them. Historical development of the industries, trends, current issues and career opportunities will be examined. Grade of C or better required.

HTA206 - Food Service Sanitation 206-1 Food Service Sanitation. (Same as HND 206) Basic sanitation principles and application in food service. Employee sanitation training, sanitation standards and safety regulations in the food service will be part of the course. Upon completion of the course, students will be eligible for the sanitation certificate national exam. Grade of C or better required.

HTA250 - Intro Event Coordination 250-3 Introduction to Professional Event Coordination. Examines the event planning and management process and will provide the skills and knowledge necessary to bring an event to life. Events of all types and sizes will be explored. Organization, implementation, and evaluation techniques will be analyzed. Grade of C or better required.

HTA255 - Corporate Events 255-3 Corporate Event Planning. Focuses on the planning, production, and management of trade shows. Various aspects of production management will be discussed including facility management, risk management, transportation, marketing, and design principles. The role of the event planner and communication with event personnel and vendors will be examined. Grade of C or better required.

HTA273 - Hotel Administration 273-3 Hotel Administration. Introduces students to the history of hotels and provides an extensive understanding of the structure of the lodging industry. Students study the various departments of a hotel, their functions and operations, and how this transforms into the overall aim to provide exceptional guest service. Restricted to HTA major or consent of instructor. Grade of C or better required.

HTA302 - Dimensions of Tourism 302-3 Dimensions of Tourism. In-depth examination of the components of the travel and tourism industry, motivators to travel, and the various market segments. Also covers analysis of the economic, social, cultural and environmental impacts to tourism. Prerequisite: HTA 202 or consent of instructor. Grade of C or better required.

HTA325 - Resort Management 325-3 Resort Management. Resort Management covers all facilities that provide recreation and entertainment in combination with lodging. Students study the popular resorts like mountain resorts, beach and marina resorts, golf, and tennis resorts, spas, and casinos, as well as other trending resorts like timeshares and cruise ships. This course provides a comprehensive look at how today's industry organizes, classifies, develops, markets, and manages these various properties.

HTA330 - Hosp Managerial Acct 330-3 Managerial Accounting for the Hospitality Industry. Presents managerial accounting concepts and explains how they apply to the hospitality industry. The contents reflect the uniform system of accounts for the lodging and foodservice industries. Grade of C or better required. Prerequisite: HTA 202, ACCT 220. Restricted to HTA majors.

HTA335 - Beverage Management 335-3 Beverage Management. Introduction to beers, wines and spirits. Legal responsibilities of alcohol service. Introduction to responsible beverage service and management. Grade of C or better required. Prerequisite: HTA 202. Lab fee: \$40.

HTA340 - Social Media Tourism 340-3 Social Media Communications in Tourism. This course will introduce students to the different social and new media platforms being used in marketing and communications within the tourism and related industries. Students will utilize the different platforms, and learn to integrate them appropriately into existing business models and communications strategies. Metrics, analytics, and optimization will be examined. Students will be required to maintain accounts with various social media platforms.

HTA350 - Event Entertainment 350-3 Event Entertainment and Production. Focus on entertainment production and management for large and small events. Research and design techniques, as well as coordination of event entertainment will be explored. Grade of C or better required.

HTA351 - Destination Management 351-3 Destination Management. Focuses on the public tourism business examining Chambers of Commerce, Convention and Visitors Bureaus, Tourism Marketing Offices at Regional, State, and Sub-regions levels, as well as, Public Lands and Tourism at Federal and

State levels. Employment opportunities in Public Tourism will be presented. Grade of C or better required. Prerequisite: HTA 202 or consent of instructor.

HTA355 - Sports Event Management 355-3 Sports Event Management. Illustrates ways to create and implement successful sporting events and turn them into financially sound productions. Sporting events at all levels, from community to global, will be examined. Grade of C or better required.

HTA360 - Quantity Food Production 360-4 Quantity Food Production. (Same as HND 360) Basic principles of foodservice management and its application to volume food production, menu development, food safety, procurement, kitchen equipment, customer service, marketing and finance will be covered during the semester. A basic cooking lab will provide hands-on experience in food preparation. A grade of C or better required. Prerequisite: HTA 202, HTA 206 or HND 206 or concurrent enrollment. Restricted to sophomore standing. Lab fee: \$30.

HTA361 - Hospitality Development 361-3 Hospitality Development. Development issues in the hospitality industry. Case studies on purchase/construction issues, inflation and recession, fiscal management and expansion of hospitality firms. Family-owned and operated businesses and entrepreneurs will be addressed. Grade of C or better required. Prerequisite: HTA 202.

HTA363 - Purchasing 363-3 Purchasing Management in the Hospitality Industry. Managerial principles of purchasing in the hospitality industry, with emphasis on functions of purchasing agents, types of markets, and methods of purchasing. Grade of C or better required. Prerequisite: HTA 202. Restricted to HTA majors only or consent of instructor.

HTA371 - Field Experience 371-3 to 6 Field Experience. Opportunity for supervised learning experiences in the student's major. 1st and 2nd 400 hour internship experience. 6 month internship experience. Major requires 371. Restricted to Hospitality and Tourism Administration majors only. Restricted to sophomore status. Special approval needed from the internship coordinator.

HTA372 - Front Office Management 372-3 Front Office Management. Principles and concepts of effective front office management in the lodging industry. Grade of C or better required. Prerequisite: HTA 202 or consent of instructor.

HTA373 - Food & Labor Cost Control 373-3 Food and Labor Cost Control. (Same as HND 373) Examination of the managerial responsibilities of the food and beverage manager in the hospitality operation. Management methods in budgeting, forecasting, cost control, and establishing operational policies and systems. A grade of C or better required. Prerequisite: HTA 206 or HND 206 or concurrent enrollment. Restricted to sophomore standing. Lab fee: \$30.

HTA380 - Hospitality Human Resources 380-3 Hospitality Human Resources. Study of practices related to management and development of human resources in the hospitality industry. Contemporary management issues specifically addressing employment sanitation standards, safety regulations in food service, and challenges in hospitality and tourism will be covered. Grade of C or better required. Prerequisite: HTA 202.

HTA390 - Special Studies in HTA 390-1 to 4 Special Studies in Hospitality and Tourism Administration. Enables students to pursue personal research interests in Hospitality and Tourism related disciplines. Grade of C or better required. Prerequisite: HTA 202. Restricted to juniors and seniors only. Special approval needed from the instructor.

HTA400 - Senior Seminar 400-1 Senior Seminar. Discussion of issues affecting hospitality and tourism professionals. Not for graduate credit. A grade of C or better required. Prerequisite: HTA 202. Restricted to senior status.

HTA415 - Gaming Management 415-3 Gaming Management. Introduction to the main components involved in the management of gaming enterprises, including an overview of legalized casino gaming in the United States, profit structure of casinos, organizational structures, Louisiana gaming law, casino drop and count procedures, cage operations, suspicious activity reporting, slot and table games management, and race and sports book operations. Special emphasis to be placed on casino marketing and promotion of responsible gaming. Prerequisite: HTA 202 with a grade of C or better.

HTA421 - Special Projects in HTA 421-3 to 6 Special Projects in Hospitality and Tourism Administration. Provides students with an independent study opportunity for an in-depth study of topics or development of projects relating to their specific interest in the hospitality and tourism fields. The topic or project area will be selected from issues, problems or developments in the hospitality and tourism fields. Course can be repeated. Grade of C or better required. Prerequisite: HTA 202. Special approval needed from the instructor.

HTA425 - Hospitality Externship 425-3 Hospitality Externship. A hospitality externship is an experiential learning opportunity that gives the students a short practical experience in their field of study. The tour(s) incorporates visiting one or more areas in the hospitality industry-hotels, food and beverage, events, travel, tourism, and other areas. Students will be exposed to the working environment of the hospitality industry. Students will have the opportunity to shadow management professionals while in the workplace. Students will benefit by having an opportunity to pursue internships and job opportunities from the visited sites. Restricted to junior and senior HTA majors only. The externship requires traveling to one or more hospitality industry destinations. The distance varies from 100 to 400 miles and could be for more than one day. This travel fee could include covering the cost of one or more rental vehicles, hotel rooms, and any other related costs. Travel fee: \$50.

HTA435 - Hospitality Mktg Mgmt 435-3 Hospitality Marketing Management. This course concentrates on marketing for hotels, restaurants and tourism-related entities. Industry specific problems and characteristics will be examined. Students will develop a comprehensive marketing plan. The starting point for the development of hospitality marketing strategy assumes basic marketing knowledge has been derived from completing a previous marketing course. The course is taught in a blended environment; students will attend class one day each week and view lectures and other material via SIU Online. A grade of C or better required. Prerequisite: HTA 202 and MKTG 304 with grades of C or better.

HTA440 - Hospitality Risk Management 440-3 Hospitality Risk Management. Introduction to risk management, security, liability and contract management applicable to the awareness and/or operations of hotels, restaurants and resorts. A grade of C or better required. Prerequisite: HTA 202.

HTA445 - Sustainable Tourism 445-3 Sustainable Tourism Planning and Development. This course focuses on sustainable tourism development as management of all resources in such a way that we can fulfill economic, social, and aesthetic needs while maintaining cultural integrity, essential ecological processes, biological diversity, and life support systems. Prerequisite: HTA 202 or consent of instructor.

HTA450 - Event Marketing 450-3 Event Marketing and Sponsorships. Strategic marketing and procurement of sponsors as they relate to events will be examined. Techniques related to association, corporation, and other special events will be analyzed and applied.

HTA455 - Event Risk Management 455-3 Event Risk Management and Safety. Techniques used to reduce event risk and liability and increase safety for event attendees will be discussed. Crowd control, fire safety, attendee behavior, food and beverage safety, emergency medical services, among others, will be explored.

HTA460 - Food Service Management 460-4 Food Service Management. The course includes practical experience in the operational administration of a food service facility. Provides students an opportunity to exercise their ability and creativity to manage a noon luncheon service. The lab involves situations in which students fill the different roles involved with food service management. A grade of C or better required. Prerequisites: HTA 202, HTA 206, HTA 360, HTA 373 with grades of C or better. Restricted to junior standing. Lab fee: \$30.

HTA461 - Service Organization & Mgmt 461-3 Service Organization and Management. (Same as HND 461) Managerial aspects of the hospitality industry as related to provision of quality service. Organizational structures, management techniques, decision-making abilities, ethics, leadership, and human resource issues are examined. A grade of C or better required. Prerequisite: HTA 202, HTA 380 with a grade of C or better. Restricted to junior standing or consent.

HTA465 - Convention Mgmt & Services 465-3 Convention Management and Services. This course serves as a primer to the understanding of the role the meeting and convention planning business plays in hotel profitability. Students will explore successful procedures, practical insight, and foundational

knowledge to succeed in convention management and services. Grade of C or better. Prerequisite: HTA 202 with a grade of C or better.

HTA470 - Hospitality Facilities Mgmt 470-3 Hospitality Facilities Management. The course provides a comprehensive survey to manage the physical plants of hotels and food service establishments by working with the engineering and maintenance divisions in an effective and efficient manner. Areas of emphasis will include maintenance, energy conservation, environmental impact, and facilities management, with specific issues such as maintenance needs as they affect operations, property expenditures and resources, and a balance between guest satisfaction and environmental sustainability being addressed. A grade of C or better required. Prerequisite: HTA 202 or consent of instructor.

Hospitality and Tourism Administration Faculty

Banz, William, Professor and Chair, Ph.D., University of Tennessee, 1995.

Davis, Nicole L., Instructor, Ph.D., Southern Illinois University, 2009.

Farrish, John, Assistant Professor, Ph.D., University of Nevada Las Vegas, 2010.

Griffin, W. Clarke, Instructor, M.B.A., McKendree University, 2015.

Karan, Ravi, Instructor, M.S., Northumbria UK, 2006.

Smith, Sylvia F., Associate Professor, Ph.D., University of Tennessee, 2007.

Histotechnology

Histotechnology is a structural science that incorporates elements from anatomy, physiology, immunology and chemistry. Histology is the science dealing with the structure, function and chemical composition of cells of normal and abnormal tissue. The histotechnologist prepares tissue specimens for microscopic examination. Histologic techniques utilize the chemical properties of both tissues and dyes to impart color to particular tissue elements to aid identification and disease diagnosis. Histology is an applied laboratory science, whose practitioners are in great demand in the current job market. A certificate in Histotechnology provides intense training in histotechnology through a combination of lectures, hands-on laboratory experience and clinical internships. Some of the certification requirements can be completed with proper selection of courses as University Core Curriculum substitutes and by using elective courses to fulfill certification requirements. Students are encouraged to discuss their interests with a departmental representative to obtain additional information.

This program admits a limited number of students based on specific selection criteria. Applicants must submit additional application materials to be approved for entry into the Histology certificate program. Students will be evaluated on the number of hours of college credit, and college grade point average as calculated by SIU Carbondale. Students begin the professional sequence each fall only. This certificate program requires the successful completion of clinical internships. In accordance with Federal and State guidelines, the clinical sites will require proof of the following: vaccination for measles, mumps, rubella, tetanus, TB, and Hepatitis B; current CPR card; proof of completion of HIPPA and blood-borne pathogens training. Affiliation sites may also require students to undergo a criminal background check and drug screening.

Histotechnology Courses

HTL400 - Histotechnology Practicum I 400-5 Histotechnology Practicum I. Designed to introduce students to the basic procedures used in the Histology laboratory. The student studies the principles and theories of fixation and staining processes. Practice and skill are developed in tissue processing, embedding, sectioning and routine staining. Laboratory safety and regulatory compliance will be included. Lecture is 2 hours; laboratory is 6 hours/week. Special approval needed from the instructor.

HTL401 - Histotechnology Practicum II 401-5 Histotechnology Practicum II. This course is designed to build on the knowledge and skills learned in HTL 400 to introduce students to more advanced aspects of histological procedures used in clinical and research settings. The course will reinforce standard histological practices and include immunohistochemistry and transmission electron microscopy. Lectures are integrated with hands-on lessons providing students both basic knowledge and practical experience. 2 hours lecture; 6 hours lab/week. Must be accepted into the HTL certificate program. Prerequisite: HTL 400 (Histotechnology Practicum I) with a minimum grade of B.

HTL402 - Special Topics-Histotechnology 402-3 Special Topics in Histotechnology. The course focuses on microscopy-based methods used in today's research. Topics can include confocal/fluorescence microscopy, laser capture microdissection and specialized techniques for water miscible plastics. Lectures are integrated with hands-on lessons providing students practical experience. Lecture 1 hour; Lab 4 hours. Prerequisite: Histotechnology Practicum I & II (HTL 400 & 401) with a minimum grade of B.

HTL403 - Lab Mgmt & Reg Compliance 403-2 Laboratory Management and Regulatory Compliance. This course covers the principles of laboratory management and regulatory safety requirements. OSHA's standard for the laboratory safety that incorporates the chemical hygiene plan will be covered. The class will focus on regulations regarding bloodbornes and other potential infectious materials. HIPPA, Ergonomics, DOT and EPA guidelines will be discussed.

HTL404 - Occupatnl Histotec Internship I 404-3 to 6 Occupational Histotechnology Internship I. Internships are scheduled at clinical or research affiliate sites throughout Illinois during the daytime hours in accordance with the schedule of the assigned site. The curriculum will include both daily instruction and corresponding laboratory experience. In an occupational setting, the histotechnologist is not isolated; he/she interacts with other areas besides histology. The internship provides practical hands-on experience that prepares the student for a career as a histotechnologist. Internship 18 hours/16 week semester or 36 hours/8 week summer semester. Course can be taken for 2 semesters at 3 credits. Must be accepted into the HTL certificate program. Prerequisites: HTL 400 and HTL 401 with minimum grades of B.

HTL405 - Occupatl Histotech Internship II 405-3 to 6 Occupational Histotechnology Internship II. Internships are scheduled at clinical or research affiliate sites throughout the United States in accordance with the schedule of the assigned site. The curriculum will include both daily instruction and corresponding laboratory experience. In a hospital or research/industrial setting, the histotechnologist is not isolated; he/she interacts with other areas besides histology. The internship provides additional hands-on experience in an occupational setting that prepares the student for a career as a histotechnologist. Internship 18 hours/16 week semester or 36 hours/8 week summer semester. Course can be taken 2 semesters for 3 credits. Must be accepted into the HTL certificate program. Prerequisites: HTL 400, 401, 404 with minimum grades of B.

HTL400 - Histotechnology Practicum I 400-5 Histotechnology Practicum I. Designed to introduce students to the basic procedures used in the Histology laboratory. The student studies the principles and theories of fixation and staining processes. Practice and skill are developed in tissue processing, embedding, sectioning and routine staining. Laboratory safety and regulatory compliance will be included. Lecture is 2 hours; laboratory is 6 hours/week. Special approval needed from the instructor.

HTL401 - Histotechnology Practicum II 401-5 Histotechnology Practicum II. This course is designed to build on the knowledge and skills learned in HTL 400 to introduce students to more advanced aspects of histological procedures used in clinical and research settings. The course will reinforce standard histological practices and include immunohistochemistry and transmission electron microscopy. Lectures are integrated with hands-on lessons providing students both basic knowledge and practical experience. 2 hours lecture; 6 hours lab/week. Must be accepted into the HTL certificate program. Prerequisite: HTL 400 (Histotechnology Practicum I) with a minimum grade of B.

HTL402 - Special Topics-Histotechnology 402-3 Special Topics in Histotechnology. The course focuses on microscopy-based methods used in today's research. Topics can include confocal/fluorescence microscopy, laser capture microdissection and specialized techniques for water miscible plastics. Lectures are integrated with hands-on lessons providing students practical experience. Lecture 1 hour; Lab 4 hours. Prerequisite: Histotechnology Practicum I & II (HTL 400 & 401) with a minimum grade of B.

HTL403 - Lab Mgmt & Reg Compliance 403-2 Laboratory Management and Regulatory Compliance. This course covers the principles of laboratory management and regulatory safety requirements. OSHA's standard for the laboratory safety that incorporates the chemical hygiene plan will be covered. The class will focus on regulations regarding bloodbornes and other potential infectious materials. HIPPA, Ergonomics, DOT and EPA guidelines will be discussed.

HTL404 - Occupntl Histotec Internship I 404-3 to 6 Occupational Histotechnology Internship I. Internships are scheduled at clinical or research affiliate sites throughout Illinois during the daytime hours in accordance with the schedule of the assigned site. The curriculum will include both daily instruction and corresponding laboratory experience. In an occupational setting, the histotechnologist is not isolated; he/she interacts with other areas besides histology. The internship provides practical hands-on experience that prepares the student for a career as a histotechnologist. Internship 18 hours/16 week semester or 36 hours/8 week summer semester. Course can be taken for 2 semesters at 3 credits. Must be accepted into the HTL certificate program. Prerequisites: HTL 400 and HTL 401 with minimum grades of B.

HTL405 - Occuptl Histotch Internship II 405-3 to 6 Occupational Histotechnology Internship II. Internships are scheduled at clinical or research affiliate sites throughout the United States in accordance with the schedule of the assigned site. The curriculum will include both daily instruction and corresponding laboratory experience. In a hospital or research/industrial setting, the histotechnologist is not isolated; he/she interacts with other areas besides histology. The internship provides additional hands-on experience in an occupational setting that prepares the student for a career as a histotechnologist. Internship 18 hours/16 week semester or 36 hours/8 week summer semester. Course can be taken 2 semesters for 3 credits. Must be accepted into the HTL certificate program. Prerequisites: HTL 400, 401, 404 with minimum grades of B.

Interior Design

The Interior Design program is continually responsive to the demands and standards of qualification of the profession and its related fields. The program is accredited by the Council For Interior Design Accreditation (CIDA), 206 Granville Ave., STE. 350, Grand Rapids, MI. 49503, 618/458-0400. A four-year curriculum is offered resulting in a Bachelor of Science degree in Interior Design that is a CIDA Accredited Professional Level Program.

Students receive a comprehensive, interdisciplinary education in preparation for design and administrative positions in the fields of commercial, contract and residential design. After passing the National Council for Interior Design Qualification (NCIDQ) Exam, graduates of the program will be qualified to practice professionally in a wide range of positions with interior and architecture firms, corporations, government agencies, or independently.

The approach toward interior design education at Southern Illinois University Carbondale provides a comprehensive technical emphasis as the basis for problem solving. At the core of the required course work are classes and studios which provide knowledge of design and the design process including programming, schematic design, design development, and construction documents. Support courses to complement and enhance the core consist of drawing, presentation, furniture, materials, history, lighting, acoustics, mechanical systems, professional practice and topics current to the profession.

The amount of material to be covered, the fast pace of assignments, and the pressure of critical reviews combine to produce a highly charged and energetic atmosphere. Successful students must be able to handle multiple projects simultaneously and demonstrate an ability to manage their time wisely.

To support students in their educational endeavors, sophomores, juniors and seniors are provided dedicated studio space. Program facilities include a resource library, model/furniture shop, a dedicated computer graphics laboratory, a digital fabrication lab, and virtual reality facilities. The computer graphics laboratory provides access to input/output devices. However, each student is required to purchase or lease a laptop computer and software that meet program specifications prior to the start of the second year for those on the four-year plan or prior to the start of the first year for those on the three-year plan. Laptop and software specifications will be supplied during the registration process.

While facilities are provided for use, costs for supplies, individual equipment, and required field trips and workshops necessary to the successful completion of the program are borne by the student. Due to the variation in individual materials use, it is impossible to predict the exact costs for each student. A reasonable estimate of additional expenses is in the range of \$1,000 to \$2,000 per academic year.

The interior design program maintains the right to retain student work for exhibition or for records and accreditation purposes. Students are advised to assemble digital files of their work for their portfolios.

Students are encouraged to participate in profession related student organizations which include the American Society of Interior Designers, International Interior Design Association, Illuminating Engineering Society, and Construction Specifications Institute. Other activities designed to enhance the overall quality of education include the University Honors Programs, travel study programs, workshops, guest lectures, and residence hall living learning communities. Students are required to have a valid passport by the beginning of their third year.

Prospective students attending another college or university prior to transferring to Southern Illinois University Carbondale should concentrate on completing courses articulated or approved as substitutes for Southern Illinois University Carbondale's University Core Curriculum requirements. Prior to taking courses that appear to equate to the professional sequence, the applicant should consult with the program director or designated representative.

Students must pass all Interior Design and Architectural Studies prefix courses with a minimum grade of C- in order to satisfy prerequisites and to graduate. If a student receives a grade of F three times in the same course, the course cannot be taken again. Students cannot repeat Interior Design or Architectural Studies prefix courses in which they received a grade of C or better.

Bachelor of Science Degree in Interior Design, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
As per University requirements for baccalaureate degrees, but must include History 101A,B.	
Requirements for Major in Interior Design	(6)+81
MATH 111 ²	(3)+1
PHYS 101	(3)
AD 207A,B, or C	3
Required Major Courses	76
ID 121, ID 122, ID 231, ID 232, ID 242, ID 251, ID 252, ID 271, ID 341, ID 351, ID 361, ID 372, ID 374, ID 382, ID 391, ID 392, ID 432, ID 451, ID 471, ID 481, ID 482, ID 491, ID 492	
Total	120

¹ ID 231, ID 232, PHYS 101 and MATH 111 will apply toward nine hours of University Core Curriculum requirements making a total of 39 in that area.

² MATH 108 and MATH 109 substitute for MATH 111.

Interior Design Courses

ID121 - Design Communication I 121-4 Design Communication I. (Same as ARC 121) Introduction to basic drawing and graphic modeling for interior design, architecture, and graphic communication. Instruction in two- and three-dimensional visualization of form and space. Topics: freehand drawing and drafting skills, orthographic projection, shade and shadow, paraline drawing, sketching, drawing and projection composition, and perspective geometry and projection. Restricted to major in Interior Design. Studio Fee: \$48.

ID122 - Design Communication II 122-4 Design Communication II. (Same as ARC 122) Continuation of Design Communication I. This course is a continuation of sketching and black and white drawing techniques. The introduction of color and color presentation techniques with emphasis on advanced interior design and architectural graphics and presentation composition. Introduction of basic computer graphics tools such as Photoshop. Prerequisite: ARC 121 or ID 121. Restricted to major in Interior Design. Studio Fee: \$48.

ID199 - Individual Study 199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring faculty member. Restricted to major in Interior Design. Special approval needed from the Instructor and Director.

ID231 - Architectural History I 231-3 Architectural History I. (Same as ARC 231) (Advanced University Core Curriculum Course) The study of the influences and the development of architecture from prehistoric to the 19th Century, in particular, the study of structure, aesthetics, and the language of architecture. With 232-Architectural History II, satisfies Core Curriculum Fine Arts requirement. Restricted to major in Interior Design.

ID232 - Architectural History II 232-3 Architectural History II. (Same as ARC 232) (Advanced University Core Curriculum Course) Course covers development of modern architecture and urban planning from the 19th Century to the present, and includes American, British and Continental architecture and urban planning and influences of Eastern Architecture and design. With 231-Architectural History I, satisfies Core Curriculum Fine Arts requirement. Prerequisite: ID 231. Restricted to major in Interior Design.

ID242 - Building Tech I: Wood 242-3 Building Technology I: Wood. (Same as ARC 242) Introduction to basic materials, components, processes, theories, and means of assembly of light wood frame construction. Building of full-scale projects on and off campus requiring the fabrication of wood structures with appropriate tools and equipment. Preparation of working drawings in light wood frame construction using BIM software. Prerequisite: ID 122 and 271. Restricted to major in Interior Design. Studio Fee: \$36.

ID251 - Design I: Concept 251-4 Design I: Concept. (Same as ARC 251) Introduction to the basic principles and elements of design by means of practical and abstract applications. Development of two- and three-dimensional solutions and presentations for conceptual design problems. Emphasis is on three-dimensional thinking and communication. Prerequisite: ID 122. Restricted to major in Interior Design. Studio Fee: \$48.

ID252 - Design II: Order 252-4 Design II: Order. (Same as ARC 252) A series of studio exercises to develop an understanding of the use of a model for structuring design information, fundamentals of programming, research, communication skills and the design process. This course is designed to satisfy the writing portion of the Communication-Across-the-Curriculum requirements. Prerequisite: ID 251, ID 271, and ENGL 101. Restricted to major in Interior Design. Studio Fee: \$48.

ID258 - Work Experience Credit 258-1 to 30 Work Experience Credit. Credit granted for job skills, management-worker relations, and supervisor experience for past work experience while employed in industry, business, the profession, or service occupations. Credit will be established by school director evaluation. Credit may be applied only at the 100- and 200-level for the interior design degree unless

otherwise determined by the director. Restricted to major in Interior Design. Special approval needed from the Director.

ID259 - Occupational Educ Credit 259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by school director evaluation. Credit may only be applied at the 100- and 200-level for the interior design degree unless otherwise determined by the director. Restricted to major in Interior Design. Special approval needed from the Director.

ID271 - Computers in Architecture 271-3 Computers in Architecture. (Same as ARC 271) This course serves as an introduction to various electronic media employed within the practice of interior design and architecture. Creative and effective skills in the use of computers in interior design and architecture applications are consistently stressed. Restricted to major in Interior Design.

ID299 - Individual Study 299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring faculty member. Restricted to major in Interior Design. Special approval needed from the Instructor and Director.

ID300 - Resources in Practice 300-1 to 3 Resources in Practice. Participation in the operation of the program resource library provides students the opportunity to become familiar with resources used in the profession. Emphasis is placed on gaining knowledge of practices necessary to competently organize and maintain a professional working resource facility. Restricted to major in Interior Design. Special approval needed from the Instructor and Director.

ID319 - Occupational Internship 319-1 to 15 Occupational Internship. Student will be assigned to a University approved entity engaged in activities related to the student's academic program and career objectives. Student will perform duties and services as assigned by the sponsor and instructor. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail. Restricted to major in Interior Design. Special approval needed from the Instructor and Director.

ID331 - Interior Design History 331-3 Interior Design History. Study of interiors, furnishings, buildings, and the language of interior design from antiquity to the present with the context of aesthetic, philosophical, psychological, socio-economic, and environmental rationales. Prerequisite: ID 232 or ARC 232, HIST 101A and B with minimum grades of C-. Restricted to major in Interior Design or Architectural Studies.

ID341 - Textiles & Materials 341-2 Interior Textiles and Finish Materials. A study of interior textiles and other finish materials within commercial and residential interior environments including: properties, production/fabrication methods, aesthetics, application, function, and performance. Emphasis is on defining and understanding aspects of sustainability related to interior textiles and other finish materials. Emerging and future materialities are explored. Prerequisites: ID 242 or ARC 242. Restricted to major in Interior Design.

ID350 - Career Subjects 350-1 to 32 Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, and design professions offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. Restricted to major in Interior Design. Special approval needed from the Instructor and Director.

ID351 - Furniture Design 351-3 Furniture Design. Study of furniture through evaluation of historic furnishings as well as contemporary furnishings. Issues include ergonomics, anthropometrics, quality of materials and methods of construction. Prerequisite: ARC 242 or ID 242, ARC 232 or ID 232 with minimum grades of C-. Restricted to major in Interior Design and Architectural Studies. Special approval needed from the instructor for nonmajors.

ID361 - Design Programming I 361-3 Design Programming I. Introduction to the design process used in interior design with emphasis on the study of methods for gathering data and analysis of project

information for design synthesis. Co-requisite with ID 391. Prerequisites: ARC 252 or ID 252. Restricted to major in Interior Design.

ID372 - Interior Construction 372-3 Interior Construction. The development of interior construction knowledge to solve interior architectural problems in new construction with an emphasis on high-rise structures. Special concern in the adherence to life safety, building, fire and accessibility codes is to be observed in the preparation of working drawings. Co-requisite with ID 374. Prerequisite: ID 242. Restricted to major in Interior Design.

ID374 - Materials & Specifications 374-3 Materials and Specifications. A study of materials and finishes applicable to the interior environment including production methods, limitations, quality control, application and uses. Emphasis is on specification for commercial interiors and liability issues for designers. Co-requisite with ID 372. Restricted to major in Interior Design.

ID391 - Design III: Context 391-5 Design III: Context. Interior design of the personal environment at the individual level. Emphasis is on residential design. Co-requisite with ID 361. Prerequisite: ARC 252 or ID 252, ID 232 or ARC 232 with minimum grades of C-. Restricted to major in Interior Design. Studio Fee: \$48.

ID392 - Design IV: Complexity 392-5 Design IV: Complexity. Interior design of the environment at the multi-user level when client/owner and client/user are different. Emphasis is on public access spaces, e.g., restaurants, stores, museums, professional offices and future facilities. Prerequisite: ID 391. Restricted to major in Interior Design. Studio Fee: \$48.

ID399 - Individual Study 399-1 to 16 Individual Study. Provides students with opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring faculty member. Restricted to Interior Design majors. Special approval needed from the Instructor and Director.

ID419 - Occupational Internship 419-1 to 15 Occupational Internship. Student will be assigned to a University approved entity engaged in activities related to the student's academic program and career objectives. Student will perform duties and services as assigned by the sponsor and instructor. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail. Restricted to major in Interior Design. Special approval needed from the Instructor and Director.

ID432 - Interior Design Seminar 432-3 Interior Design Seminar. Study of the current trends and topics in interior design. Not for graduate credit. Prerequisite: ID 491. Restricted to major in Interior Design.

ID451 - Design Programming II 451-3 Design Programming II. Preliminary stage of senior design project includes project research, data gathering, and analysis. Not for graduate credit. Co-requisite with ID 491. Prerequisite: ID 392. Restricted to major in Interior Design.

ID471 - Professional Practice I 471-3 Professional Practice I. (Same as ARC 591) Introduction to the organization, management, and practice of interior design and architecture as a business and profession. Emphasis is placed on the range of services provided, professional ethics, business management, marketing, contracts and negotiations, design cost analysis/control, and other aspects of professional practice. Prerequisite: ID 392. Restricted to major in Interior Design.

ID481 - Environmental Design II 481-3 Environmental Design II: Energy and Systems. (Same as ARC 481 and ARC 583) The study of the influences of energy, human comfort, climate, context, heating, cooling and water on the design of buildings and sites. The design of passive and active environmental systems and strategies for sustainability. Not for graduate credit. Prerequisite: ID 372, ID 392, PHYS 101.

ID482 - Environmental Design III 482-3 Environmental Design III: Lighting and Acoustics. (Same as ARC 482 and ARC 584) This course provides a comprehensive overview of the luminous and sonic environment with emphasis on energy-conscious design. Prerequisite: ID 391, PHYS 101 with minimum grades of C-. Restricted to major in Interior Design.

ID491 - Design V: Corporate 491-5 Design V: Corporate. Interior design of the environment at the corporate or institutional level where client/owner and client/user are significantly different. Emphasis is

on design. Furniture systems, particularly in the area of office planning are to be included. Facility types include financial institutions and institutional facilities. Not for graduate credit. Prerequisite: ID 372, ID 374, ID 392 with grades of C- or higher. Restricted to major in Interior Design. Studio Fee: \$48.

ID492 - Design VI: Capstone 492-5 Design VI: Capstone Design Studio. Completion of an interior design project of large square footage as initiated in ID 451. Emphasis on design process from schematic design to completion of annotated comprehensive solution and presentation. Facility types vary and may include a component of community involvement. Not for graduate credit. Prerequisite: ID 451, 481, 491. Restricted to major in Interior Design. Studio Fee: \$48.

ID499 - Individual Study 499-1 to 16 Individual Study. Provides students with opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring faculty member. Not for graduate credit. Restricted to Interior Design majors. Special approval needed from the instructor and director.

Interior Design Faculty

Anz, Craig K., Associate Professor, Ph.D., Texas A&M, 2009, M.Arch., University of Texas at Arlington, 1991.

Brazley, Michael D., Associate Professor, Ph.D., University of Louisville, 2002, B.Arch., Howard University, 1978.

Davey, Jon, Professor and Program Director, Ph.D., Southern Illinois University Carbondale, 2011.

Dobbins, John K., Associate Professor and Interim Director, Head of Master of Architecture Program, M.Arch., M.B.A., University of Illinois, 1986.

Gonzalez-Torres, Rolando E., Associate Professor, Ph.D., Universitat Politècnica de Catalunya, Spain, 2008.

Hays, Denny M., Associate Professor, Emeritus, M.Arch., University of Utah, 1971.

Lach, Norman, Assistant Professor, M.Arch., University of Illinois Champaign, 1974.

LaGarce, Melinda, Associate Professor, Emerita, M.F.A., Texas Technology University, 1972.

Morthland, Laura, Associate Professor, M.I.Arc., University of Oregon, 2003.

McDonald, Shannon, Associate Professor, M.Arch., M.F.A., Yale University, 1992.

Owens, Terry A., Associate Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1984.

Poggas, Christy, Assistant Professor, Emerita, M.S. Ed., Southern Illinois University Carbondale, 1990. B.Arch., University of Arizona, 1975.

Smith, Peter B., Associate Professor, M.Arch., University of Illinois, 1980.

Swenson, Robert, Associate Professor, Emeritus, M.Arch., Yale University, 1969.

Wendler, Walter V., Professor, Emeritus, Ph.D., University of Texas, 1991, M.Arch., University of California, Berkeley, 1975.

Wessel, Stewart P., Professor, M.F.A., University of North Texas, 1992.

White, David J., Associate Professor, Emeritus, M.S. Ed., Southern Illinois University Carbondale, 1991.

Industrial Management and Applied Engineering

The Industrial Management and Applied Engineering major has as its objective the training of qualified personnel who can develop and direct the production and distribution of products and services. The major is designed to prepare management-oriented technical professionals in the economic-enterprise system.

The Industrial Management and Applied Engineering curriculum is flexible enough to provide the means whereby graduates of two-year occupational programs may obtain a Bachelor of Science degree. A graduate of a two-year industrially-oriented occupational program, such as aviation, construction, drafting, data processing, electronics, machine tool, mechanical, and mining may have an appropriate preparation to pursue a Bachelor of Science degree with a major in Industrial Management and Applied Engineering.

Students with work related experience might receive credit toward the degree via IMAE 258. Additional flexibility in earning credit toward the degree is possible through cooperative work experience provided meaningful employment is available.

A Capstone Option may be available in the Industrial Management and Applied Engineering major. Students holding technical associate degrees of at least 60 semester hours in non-baccalaureate-oriented programs or equivalent certification with a minimum grade point average of 2.0 are qualified. For the Industrial Management and Applied Engineering major, the associate degree or equivalent certification should be in an industry-related field. This option permits qualified students to fulfill their degree requirements by completing 60 semester hours of work approved by the Capstone advisor. Each individual's program of study may differ according to the previous academic work.

The Association of Technology, Management, and Applied Engineering accredits the Industrial Management and Applied Engineering program. For each curriculum, a minimum of 30 hours in Industrial Management and Applied Engineering courses must be taken in residence at Southern Illinois University Carbondale.

Bachelor of Science Degree in Industrial Management and Applied Engineering, College of Engineering

Industrial Management and Applied Engineering Major - Quality Management Specialization

The quality management specialization is designed to prepare graduates for supervisory and technical management positions in manufacturing. Curriculum requirements are broad based to enable the graduate to obtain employment in manufacturing areas such as quality control, processes, safety, methods analysis, and computer-aided manufacturing/robotics. The Capstone Option feature is available for students and is described in the Capstone Option section.

Students are required to earn a minimum of 6 credit hours of any combination of laboratory, hands-on, and/or practical experiences prior to completion of the program:

- Laboratory credit hours can be applied only to those laboratory courses that are approved by the department. Laboratory credit hours earned through an AAS program are eligible for consideration.
- Hands-on experiences and/or practical experiences include credit hours obtained through the following courses: IMAE 258, IMAE 358, IMAE 319, and IMAE 342.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Foundation Skills	13
ENGL 101, ENGL 102	6
UNIV 101	1
Mathematics (Substitute Mathematics in major)	3
CMST 101	3
Disciplinary Studies	23
Fine Arts	3

Degree Requirements	Credit Hours
Human Health	2
Humanities	6
Science (substitute Physics in major for 3 hours)	6
Social Science	6
Integrative Studies	3
Multicultural	3
Requirements for Major in Industrial Management and Applied Engineering with a Specialization in Quality Management	(6)+81
IMAE Core Requirements	12
PHYS 203A,B, PHYS 253A,B	(3) + 5
MATH 108	(3)
MATH 140 or IMAE 307	4
PSYC 323 or IMAE 340	3
Specialization in Quality Management:	
IMAE 110, IMAE 208, IMAE 305, IMAE 376, IMAE 390, IMAE 392, IMAE 442, IMAE 445, IMAE 450, IMAE 465, IMAE 470A, IMAE 470B, IMAE 476	39
Technical Electives	21-22
Electives	8
Total	120

Professional Development Sequence (PDS) in Lean Six Sigma

The PDS in Lean Six Sigma is intended to enhance the marketability and training of students who wish to pursue careers in quality management and process improvement. Enrollment in the Industrial Management and Applied Engineering major is not required to complete the program. The PDS in Lean Six Sigma facilitates prospective students to transfer earned program credits to pursue a B.S. degree in Industrial Management and Applied Engineering at SIU. Students not wishing to pursue a baccalaureate must complete the unclassified undergraduate application.

Degree Requirements	Credit Hours
Requirements for PDS in Lean Six Sigma	12
Courses: IMAE 450, IMAE 465, IMAE 470A, IMAE 470B. All courses are offered Face-to-Face and Online.	

Industrial Management and Applied Engineering Courses

IMAE105 - Computer-Aided Drafting 105-3 Computer-Aided Drafting. (Same as EET 103) Links the components of technical sketching with current CAD software. Sketching to include: orthographic projection, sectional views and dimensioning. Employ these elements with current CAD software in creating drawing entities, managing layers, displaying and modifying drawings, annotating and dimensioning, and file management. Restricted to College of Engineering students or departmental approval required.

IMAE110 - Geometric Dimensioning & Tolerancing 110-3 Geometric Dimensioning and Tolerancing. Geometric dimensioning and tolerancing (GD&T) principles based on industry standards such as ANSI and ASME. Includes terminology, symbol identification feature control frames, modifiers, datums, etc. Selection of datum features, calculation of bonus tolerances, assignment of form, run-out and positional tolerances, and tolerance stack-up. Restricted to College of Engineering students or departmental approval required.

IMAE200 - Field Experience I 200-2 Field Experience I-Personal Leadership. This is a one week immersion experience that introduces new students to the personal habits practiced by disciplined leaders. Students will learn how to hold themselves accountable, work as a team to solve problems, and the importance of good leadership. At the end of the week they will have gained self confidence and trust in their teammates.

IMAE201 - Intro to STEM Leadership Dev 201-2 Lab I-Introduction to STEM Leadership Development. This class introduces students to the exemplary leadership practices and the skills necessary to lead. Students will learn how to lead by applying the readings and lectures to their own STEM organization.

IMAE202 - Lab II-STEM Leadership 202-2 Lab II-STEM Leadership (Team-Building). This course is designed to provide students with knowledge and skills necessary for building a team. They will learn the stages of team development and effective conflict resolution. Prerequisite: IMAE 201 with a grade of B or better.

IMAE203 - Fit to Lead I 203-1 Fit to Lead I (Self-Discipline). This course will provide the knowledge and skills for a leader to cope with stress and maintain a healthy mind and body. Students will engage in various intense physical fitness activities while learning important aspects of healthy lifestyles such as nutrition, weight-management, alcohol education, and sex education.

IMAE204 - Fit to Lead II 204-1 Fit to Lead II (Team-Building). This course will challenge students' problem solving skills and foster teamwork through physical activities of team building. These activities will promote students' personal, psychological, and social development in fostering cooperation and cohesiveness within a team. Prerequisite: IMAE 203 with a grade of B or better.

IMAE208 - Fundamentals of Mfg Processes 208-3 Fundamentals of Manufacturing Processes. [IAI Course: IND 913] Introduction to the basic processes, equipment, and material used in manufacturing. Includes plastics, metal removal, materials joining, casting, and some of the newer processes. Restricted to College of Engineering students or departmental approval required.

IMAE209 - Mfg Process Laboratory 209-3 Manufacturing Process Laboratory. (Same as EET 209) Laboratory experiments to familiarize the student with the theory and operation of manufacturing

processes. Laboratory. Prerequisite: IMAE 208 or consent of instructor. Restricted to College of Engineering students or departmental approval required.

IMAE258 - Work Experience Credit 258-2 to 30 Work Experience Credit. Credit granted for past work experience while employed in fields related to the student's educational objective. Credit is established by departmental evaluation. Restricted to College of Engineering students or departmental approval required.

IMAE259 - Occupational Experience 259-2 to 60 Occupational Credit. For occupational credit earned at junior colleges and technical institutes. Credit is established by departmental evaluation. Restricted to College of Engineering students or departmental approval required.

IMAE270 - Comp Methods for Indus Tech 270-3 Computational Methods for Industrial Technologists. Introduces the student to a problem-oriented computer language that is used to solve relevant problems that occur in industry. Restricted to College of Engineering students or departmental approval required.

IMAE300 - Field Experience II 300-2 Field Experience II-Mentor Leadership. Second year students will be taught mentoring skills, and then asked to assume team leadership roles where they will mentor first year members. They will employ the mentoring model of: Telling, Showing, Doing, and Correcting, in developing their mentees. Mentors will provide a support system for new students and introduce them into a leadership culture. They will serve as role models and engage in developing new member's organizational values. Prerequisite: IMAE 200 with a grade of B or better.

IMAE301 - Lab III-STEM Leadership 301-2 Lab III-STEM Leadership (RSO Leadership). Second year students will apply their leadership skills through leading and organizing RSO projects/programs for Southern Illinois University. Examples of projects are ATMAE Robotics Competition, Steel Bridge Competition, Ag-bassadors, Science Ambassadors, Cyber-Dawgs, and other STEM related projects/programs. A faculty mentor will closely monitor their performance during these projects/programs. Prerequisites: IMAE 201 and IMAE 450 with grades of B or better.

IMAE302 - Lab IV-STEM Leadership 302-2 Lab IV-STEM Leadership (Service Leadership). This capstone course is designed to test the student's cumulative knowledge by having them lead a technical team. Students are required to either hold the officer position of president of a technical RSO in a STEM college, or lead a team in a technical community service project. Examples of these projects include mentoring a local high school robotics team, math team, science club, or computer club. Faculty mentors will review the student's project proposal; the student will execute the project, and then provide a report on the project. Prerequisites: IMAE 202 and IMAE 301 with grades of B or better.

IMAE303 - Fit to Lead III 303-1 Fit to Lead III (Mentoring). This is a final course in the Fit to Lead series. At this level, students are expected to practice their mentoring skills in promoting the culture of healthy living. They are expected to apply knowledge in wellness programs to encourage the participation of new members in Fit to Lead I (Self Discipline) course. Prerequisites: IMAE 203 and IMAE 204 with grades of B or better.

IMAE305 - Industrial Safety 305-3 Industrial Safety. Principles of industrial accident prevention; accident statistics and costs; appraising safety performance; recognizing industrial hazards and recommending safeguards. Includes a study of the Occupational Safety and Health Act and the Coal Mine Health and Safety Act. Restricted to College of Engineering students or departmental approval required.

IMAE307 - Applied Calculus for Tech 307-3 Applied Calculus for Technology. Applying mathematical techniques to technology problems, including the analysis, formulation, and problem solutions. Techniques of differentiation, max-min problems, and elementary techniques of integration. Prerequisite: MATH 108 or equivalent with a minimum grade of C. Restricted to College of Engineering students or departmental approval required.

IMAE315 - Leadership Communications 315-3 Leadership Communications. Leadership Communications is designed to introduce students to professional communication. They will learn how to become a better leader by developing their communication abilities and by understanding the role of communication inside and outside of organizations. The course teaches students how to communicate effectively with different audiences and how to use logical, persuasive techniques in writing

and presenting. Students develop their written, oral, interpersonal, and team skills while developing an understanding of leadership communication in different contexts, including their own major field of study.

IMAE319 - Industrial Internship 319-2 to 16 Industrial Internship. Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences, and examinations. Special approval needed from the instructor. Mandatory Pass/Fail. Restricted to College of Engineering students or departmental approval required.

IMAE321 - Underground Mining 321-3 Underground Mining. Study of terminology, mining methods, equipment selection, ventilation, haulage, coal handling, and safety parameters associated with underground coal extraction technology. Restricted to College of Engineering students or departmental approval required.

IMAE340 - Introduction to Supervision 340-3 Introduction to Supervision. Analysis of problems of supervisors. Topics include leadership, motivation, communication, grievances, training, discipline, group and individual effectiveness, and labor relations. This course is designed to introduce the roles and responsibilities of supervisors and managers in the workplace. In addition, this course is designed to prepare persons who are or intend to become supervisors in business, industry, government, or in the service industry. Prerequisites: none. Restricted to College of Engineering students or departmental approval required.

IMAE341 - Maintenance 341-3 Maintenance. Principles and practices of maintenance department organization, preventative procedures, and typical equipment problems. Also, includes related topics such as plant protection, custodial services, and maintenance of powerplants. Restricted to College of Engineering students or departmental approval required.

IMAE342 - Industri Tech Co-op Education 342-1 to 12 Industrial Technology Cooperative Education. Supervised work experience in industry with an emphasis on manufacturing. Students will gain first-hand knowledge of the various aspects of Industrial Technology. Work experience is supervised by a faculty. Reports will be required from the student and employer. Hours may count toward technical electives. Mandatory Pass/Fail. Restricted to junior standing. Restricted to College of Engineering students or departmental approval required.

IMAE351 - Industrial Metrology 351-3 Industrial Metrology. Methods and equipment of industrial measurement and inspection. Includes 3-D measuring machines, lasers, and non-destructive testing. Restricted to College of Engineering students or departmental approval required.

IMAE358 - Work Experience Credit 358-1 to 30 Work Experience Credit. Credit granted for past work experience that is principally management and/or supervisory in nature. Students seeking credit must demonstrate an employment history in fields/areas related to the student's educational objective. Credit is established by departmental evaluation. Restricted to College of Engineering students or departmental approval required.

IMAE375 - Production & Inventory Control 375-3 Production and Inventory Control. Production and inventory control systems. Includes topics in forecasting, master production scheduling, material requirements planning, capacity requirements planning, inventory management, production activity control, and applicable operations research techniques. Prerequisite: MATH 108 or equivalent with a minimum grade of C. Restricted to College of Engineering students or departmental approval required.

IMAE376 - Supply Chain Ops/Logistics 376-3 Supply Chain Operations and Logistics. The objective of this course is to introduce the basic principles and techniques of supply chain operations and logistics. Major topics covered include overview of supply chain management, roles of logistics in supply chains, global dimensions of supply chains, demand management, order management and customer service, managing inventory in the supply chain, transportation, distribution, and other modern supply chain management techniques and issues. Prerequisite: MATH 108 or equivalent. Restricted to College of Engineering students or departmental approval required.

IMAE386 - Total Quality 386-3 Total Quality. Application of quantitative methods and human resources to improve product quality, enhance productivity, customer satisfaction, manufacturing organizational

effectiveness and ability to compete in a global market. Restricted to College of Engineering students or departmental approval required.

IMAE390 - Cost Estimating 390-3 Cost Estimating. (Same as EET 390) Study of the techniques of cost estimation for products, processes, equipment, projects, and systems. Prerequisite: MATH 108 or equivalent. Restricted to College of Engineering students or departmental approval required.

IMAE392 - Facilities Plan/Workplace Dsgn 392-3 Facilities Planning and Workplace Design. Discusses and applies the tools necessary to design a work area (e.g. facility, department, workstation) from various aspects including time standards development and uses, throughout requirements, ergonomics, lean manufacturing, methods engineering, work environment, safety, material handling, process flow, and cost. Various methods and techniques will be introduced and utilized to analyze the effectiveness and efficiency of a given layout. Prerequisite: IMAE 208 or consent of instructor, MATH 108 with minimum grades of C. Restricted to College of Engineering students or departmental approval required.

IMAE395 - Technology Design 395-3 Technology Design. An elective project on a technical subject selected by the student with advice from the instructor. Stimulates original thought and creativity. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE405 - Applied Robotics & Control 405-4 Applied Robotics and Control Lab. Laboratory experiments to familiarize the student with writing robotic programs for performing specific tasks, developing and debugging PLC code, integrating robotic programming and PLC programming in the control of a robotics cell, developing basic programming skills using computer simulation packages; milling and lathing applications of CNC machining. Prerequisite: IMAE 445 or ET 445 and IMAE 455 or concurrent enrollment in both. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE430 - Health/Injury:Work Setting 430-3 Health and Injury Control in a Work Setting. (Same as PH 430) Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness, and injury control that are effective. Field trips to work sites are included. Restricted to College of Engineering students or departmental approval required.

IMAE440 - Manufacturing Policy 440-3 Manufacturing Policy. Review of all areas covered by the industrial technology program. Includes problems which simulate existing conditions in industry. Students present their solutions to the class and to the instructor in a formal manner. Restricted to College of Engineering students or departmental approval required.

IMAE442 - Fundamentals of Leadership 442-3 Fundamentals of Leadership. This course is designed to provide an introduction to leadership by focusing on what it means to be a good leader. Emphasis in the course is on the practice of leadership. The course will examine topics such as: the nature of leadership, recognizing leadership traits, developing leadership skills, creating a vision, setting the tone, listening to out-group members, handling conflict, overcoming obstacles, and addressing ethics in leadership. Attention will be given to helping students to understand and improve their own leadership performance. Not for graduate credit. Restricted to sophomore standing or higher. Restricted to College of Engineering students or departmental approval required.

IMAE445 - Computer-Aided Manufacturing 445-3 Computer-Aided Manufacturing. (Same as EET 445) Introduction to the use of computers in the manufacturing of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control and quality control. Laboratory. Prerequisite: IMAE 208, MATH 108 or equivalent. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE450 - Project Management 450-3 Project Management. This course is designed to provide students with an overview of the project management process followed by an in-depth examination of the activities needed to successfully initiate, plan, schedule, and control the time and cost factors of the project. Prerequisite: none. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE455 - Industrial Robotics 455-3 Industrial Robotics. (Same as EET 455) Study of robotics within a wide variety of application areas. Topics covered include classification of robots, sensor technology,

machine vision; control systems, including programmable logic controllers (PLCs); robot safety and maintenance; and economic justification of robotic systems. Prerequisite: MATH 111 or equivalent. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE465 - Lean Manufacturing 465-3 Lean Manufacturing. This course will cover the principles and techniques of lean manufacturing. Major topics covered include lean principles, 5S, value stream mapping, total productive maintenance, manufacturing/office cells, setup reduction/quick changeover, pull system/Kanbans, continuous improvement/Kaizen, lean six sigma, lean simulation, and other modern lean manufacturing techniques and issues. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE470A - Six Sigma Green Belt 470A-3 Six Sigma Green Belt. Study the knowledge areas of Six Sigma Green Belt. Topics include six sigma goals, lean principles, theory of constraints, design for six sigma, quality function deployment, failure mode and effects analysis, process management, team dynamics, project management basics, data and process analysis, probability and statistics, measurement system analysis, and process capability. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE470B - Six Sigma Green Belt II 470B-3 Six Sigma Green Belt II. The objective of this course is to provide the student with a complete coverage of the statistical and analytical tools used and applied in the "Six Sigma" methodology at the green-belt level. Topics include: discrete probability distributions, continuous probability distributions, statistical process control tools, quality control charts, process capability analysis, gauge and measurement capability studies, cumulative sum control charts and exponentially-weighted moving average control charts. Prerequisite: IMAE 307 or equivalent, IMAE 470A or consent of instructor. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE475 - Quality Control 475-3 Quality Control. Study the principles and techniques of modern quality control practices. Topics include total quality management, fundamentals of statistics, control charts for variables and other quality related issues and techniques. Restricted to senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE476 - Supply Chain Design & Strategy 476-3 Supply Chain Design and Strategy. The objective of this course is to introduce the basic principles and techniques of supply chain design and strategy. Major topics covered include supply chain network analysis and design, sourcing materials and services, producing goods and services, supply chain sustainability, strategic challenges and change for supply chains, supply chain relationships, supply chain performance measurement and financial analysis, managing information flow and other modern supply chain management techniques and issues. Prerequisite: IMAE 376 with a minimum grade of C. Restricted to Junior/Senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE480 - Six Sigma Black Belt 480-3 Six Sigma Black Belt. (Same as QEM 515) The purpose of this course is to provide the student with a comprehensive coverage of the knowledge areas and tools of Six Sigma beyond green-belt training, focusing on descriptive and analytical methods to deal with variability including point and interval estimation, hypothesis testing, and design of experiments. Topics include: confidence intervals, hypothesis testing, regression analysis, analysis of variance, single factor experiments, block design of experiments. Prerequisite: IMAE 307 or equivalent, IMAE 470B with grades of C or better. Restricted to College of Engineering students or departmental approval required. Special approval needed from the department. Restricted to Junior/Senior standing.

IMAE485 - Quality Control II 485-3 Quality Control II. Study the principles and techniques of modern quality control practices. Topics include fundamentals of probability, control charts for attributes, acceptance sampling systems, reliability and other quality related issues and techniques. Restricted to senior standing. Restricted to College of Engineering students or departmental approval required.

IMAE490 - Six Sigma 490-3 Six Sigma. Six Sigma is a data-driven management system with near-perfect-performance objectives that has been employed by leading corporations. Its name is derived from the statistical target of operating with no more than 3.4 defects per one million chances, but its principles can be applied in business of all types to routinely reduce costs and improve productivity. This overview

describes what Six Sigma is, and what its techniques and tools are. Prerequisite: IMAE 475. Restricted to College of Engineering students or departmental approval required.

IMAE492 - Special Probs in Industry 492-1 to 6 Special Problems in Industry. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE494A - Applied Project-Motion/Time 494A-1 Applied Project-Motion and Time Study. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE494B - Applied Project-Cost Estimating 494B-1 Applied Project-Cost Estimating. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE494C - Spec Proj-Mat Handl Plant Layt 494C-1 Applied Project-Materials Handling and Plant Layout. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE494D - Special Project-Prod Inv Ctrl 494D-1 Applied Project-Production and Inventory Control. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE494E - Special Project-Quality Cntrl 494E-1 Applied Project-Quality Control. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE494F - Special Project-Mfg Policy 494F-1 Applied Project-Manufacturing Policy. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE494H - Special Project-Fund Ind Procs 494H-1 Applied Project-Fundamentals of Industrial Processes. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE494I - Special Project-Indust Safety 494I-1 Applied Project-Industrial Safety. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

IMAE494K - Special Project-Comp-Aid Mfg 494K-1 Applied Project-Computer-Aided Manufacturing. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. Not for graduate credit. Special approval needed from the instructor. Restricted to College of Engineering students or departmental approval required.

Industrial Management and Applied Engineering Faculty

Chang, Feng-Chang (Roger), Associate Professor, Ph.D., Ohio State University, 1985.

Chen, Han Lin, Associate Professor, Emeritus, M.S., Southern Illinois University, 1958.

Contor, Keith L., Associate Professor, Emeritus, M.S., State College of Washington at Pullman, 1960.

Crosby, Garth V., Associate Professor, Ph.D., Florida International University, 2007.

Cross, Bud D., Visiting Assistant Professor, Emeritus, M.S., Southern Illinois University, 1965.

DeRuntz, Bruce D., Professor, Ph.D., Southern Illinois University Carbondale, 2005.
Dunning, E. Leon, Professor, Emeritus, Ph.D., University of Houston, 1967.
Dunston, Julie K., Associate Professor and Interim Chair, Ph.D., Florida State University, 1995.
King, Frank H., Visiting Assistant Professor, Emeritus, Ph.D., Southern Illinois University, 1981.
Marusarz, Ronald K., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1999.
Meyers, Fred E., Associate Professor, Emeritus, M.B.A., Capitol University, 1975.
Spezia, Carl J., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2002; 2005.
Velasco, Tomas, Associate Professor, Ph.D., University of Arkansas, 1991.

Information Systems and Applied Technologies

The School of Information Systems and Applied Technologies in the College of Applied Sciences and Arts offers the following technically related courses. These courses serve as common requirements for various majors. Selected courses are available to students enrolled in other academic units.

Game Design and Development Minor

The minor in Game Design and Development (GDD) is a multi-disciplinary minor offered by the School of Information Systems and Applied Technologies (ISAT), and the College of Mass Communication and Media Arts (MCMA). The purpose of this minor is to prepare students who wish to enter the field of game design and development. The Game Design and Development minor requires 15 credits. For IST majors, the required courses are RTD 201 and IST 392; for all other majors, IST 209 and MCMA 499 are required. Only after completing 12 credit hours in GDD, students can take the capstone course of IST 392 (IST major) or MCMA 499 (RTD major). This course is co-taught by two faculty (one from IST and one from MCMA) as an independent study. The GTDD minor students are required to display their final project at each program's website and/or showcase.

The approved electives are in two areas for 9 credit hours: Game Studies and Production -- RTD 331, RTD 378, RTD 382, RTD 478, RTD 487 and Game Programming (Prerequisite) -- IST 312 (209), IST 336 (209), IST 403 (312), IST 422 (312 & 336), & IST 446 (209). All prerequisites for these courses must be fulfilled prior to enrollment in each course. All courses for this minor must be completed with a grade of C or better. All students who wish to enroll in this minor must do so through the ISAT advisors or the MCMA advisors. The required courses for each major (IST & RTD) will not be counted as the GDD minor courses.

Required (6 credit hours):

- RTD 201 - Introduction to Media Production
- IST 392 - Special Projects
- IST 209 - Introduction to Programming
- MCMA 499 - Independent Study

Elective Courses (9 credit hours):

Game Studies and Production:

- RTD 331 - Digital Graphics Foundations
- RTD 378 - Writing for Game Production
- RTD 382 - 2D Digital Character Animation I
- RTD 478 - Game Narrative
- RTD 487 - 3D Animation I: Modeling

Game Programming:

- IST 312 - Digital Graphis Foundations

- IST 336 - Web-based Applications in Information Systems
- IST 403 - Client-Side Web Development
- IST 422 - Mobile Programming
- IST 446 - Software Engineering and Management

Information Systems and Applied Technologies Courses

ISAT101 - Intro Information Processing 101-3 Introduction to Information Processing. The successful student should be able to demonstrate an understanding of basic terminology, procedures, applications and equipment used in information processing. Topics covered will range from simple computer processing techniques to advanced contemporary applications. Credit cannot be given for both 101 and Information Systems Technologies 109. Lecture three hours.

ISAT113 - Info Assurance Everyone 113-3 Information Assurance for Everyone. This course is designed to give all students, especially those without a technical or computing background, an introduction to the concerns and issues associated with computers, social networks, and the Internet. Students will learn about the motivation of cyber criminals, common tricks and tactics used by them, and methods of defending against them. At the end of the course, students will have the knowledge necessary to more safely and securely use modern communication technologies and students will learn about basic ethical and legal issues of computing, consequences of insecurity for individuals and organizations, and leave the course with a broad understanding of the basics and topics of information security and assurance. Lab and lecture. A grade of C or better is required for IST majors.

ISAT120 - Fiscal Aspects of ASA I 120-3 Fiscal Aspects of Applied Sciences and Arts I. An individualized program of instruction designed to acquaint students enrolled in the various technical programs of the College of Applied Sciences and Arts with applications and procedures common to their area of specialization. Students will be able to demonstrate a basic working knowledge of the standard documents and procedures related to their specific area through the use of business working papers and practice sets. Open to students in the College of Applied Sciences and Arts. Lecture three hours.

ISAT121 - Installing/Upgrading Computers 121-3 Installing and Upgrading Computer Systems. This course introduces students to the process of installing and upgrading personal computer systems. Topics include identification, selection, and installation of hardware, operating system, peripherals, and basic networking. Introduction to basic electrical measurements and numbering systems are also included. Lecture and Laboratory. A grade of C or better is required. Restricted to majors within ISAT.

ISAT125 - Operating Systems 125-3 Optimizing and Troubleshooting Operating Systems. This course will introduce both Linux and Windows operating systems, from a user and an administrator standpoint. Basic monitoring, optimizing, and troubleshooting tools will be utilized to understand and manipulate a PC. The student will also create a Linux server. A grade of C or better is required. Restricted to majors within ISAT.

ISAT213 - Application PGM Projects 213-3 Application Programming Projects. This course will enable the student to use advanced techniques in the design and implementation of application programs. The student draws upon knowledge gained in previous courses and develops an understanding of the interrelationship of subject matter. Topics will include structures, classes, overloading, inheritance and exception handling. Prerequisite: Information Systems Technologies 209.

ISAT216 - Info Security Fundamentals 216-3 Information Security Fundamentals. This course provides students in technical programs with an introduction to a broad range of information security concepts. Students will learn concepts required for the CompTIA Security+ certification. These include the following domains: networks security, compliance and operational security, threats and vulnerabilities, application, data and host security, access control and identity management, and cryptography. Lecture and Lab. A grade of C or better is required. Restricted to majors within ISAT.

ISAT224 - Network Fundamentals 224-3 Network Fundamentals. This course takes a lab/lecture approach which leads the student through a series of activities involved in the installation of a local area network (LAN) capable of sharing information and a variety of electronic input/output devices. The student

will be introduced to various LAN designs, communication protocols, network certification requirements, as well as procedures for selecting, installing, and managing a LAN. Lecture and Laboratory. A grade of C or better is required. Restricted to majors within ISAT.

ISAT229 - Computing:Business Admin 229-3 Computing for Business Administration. [IAI Course: BUS 902] The successful student will acquire an understanding of information systems concepts and of the use of computers to process business data through solving a variety of business related problems. Emphasis on the computer as a management tool. Lecture one hour, lab two hours.

ISAT259 - Occupational Education Credit 259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation. This credit may be applied only at the 100 and 200 level unless otherwise determined by the school's director. Restricted to majors in the Information Systems and Applied Technologies.

ISAT292 - Intro to Microcomputers 292-1 Introduction to Microcomputers. A short course introduction to concepts and procedures related to using microcomputer hardware and software. Lecture one hour. Mandatory Pass/Fail.

ISAT299 - Individual Study 299-1 to 16 Individual Study. Provides students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources of facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Special approval needed from the instructor.

ISAT308 - Device Interfacing & Control 308-3 Device Interfacing and Control. (Same as EST 308) This course provides a basis for electronic device interfacing for systems control. The principles of voltage, current, power, diodes, transistors, and other essential electronic devices will be covered as well as digital system principles. A major focus of the course will be interfacing to a micro-controller a variety of sensors and control devices necessary for system monitor and control. A grade of C or better required. Lecture and Lab. Prerequisite: IST 209 with a grade of C or better.

ISAT316 - Information Assurance I 316-3 Information Assurance I. The purpose of this course is to provide the student with an overview of the field of Information Security and Assurance. Students will be exposed to the spectrum of security activities, methods, methodologies, and procedures. Coverage will include inspection and protection of information assets, detection of and reaction to threats to information assets, and an overview of the Information Security Planning and Staffing functions. A grade of C or better is required. Prerequisite: ISAT 216, 224, and each with a grade of C or better.

ISAT325 - Small Office Networking 325-3 Small Office Networking. This lecture/lab course provides an introduction to the planning installation, and administration of a small office network. Topics covered: an overview of current networking technologies, small to moderate scale network planning and design, an introduction to peer-to-peer and client-server topologies, file storage and back-up, and other topics specific to the small business environment. Restricted to major within ISAT.

ISAT327 - Linux Essentials 327-3 Linux Essentials. Students will learn to use Linux operating systems in this course. Intermediate computing skills are required, but previous experiences to Linux is not necessary. From the foundations of the open source philosophy to advanced command line activities, this course teaches the skills and knowledge needed for the Linux Essentials certification exam. Topics include selecting a Linux distribution, installing applications, operating system security, and basic shell scripting to automate tasks. Lecture and lab. A grade of C or better is required.

ISAT335 - Network Protocols and Apps 335-3 Network Protocols and Applications. Students will build upon their fundamental knowledge of networking by examining, in depth, the operation of TCP/IP and a limited set of application layer protocols. The operation and implementation of DHCP, DNS, and HTTP will be discussed with hands-on lab and implementation exercises. Analysis of the most common data link layer protocols will be performed and installation of physical layer components will be performed. Lecture and Laboratory. A grade of C or better is required. Prerequisite: ISAT 216 and ISAT 224, each with a grade of C or better.

ISAT340 - Intro Video Game Design 340-3 Introduction to Video Game Design and Industry. Introduction to electronic video game development, processes, and game development careers.

This course includes an examination of the history of video games, genres and platforms, the game development process with an emphasis on design elements, audio for games, game industry teams and careers, and managerial roles in the game development and publishing industry. A grade of C or better is required for IST major or GDD minor.

ISAT342 - Device Programming for IoT 342-3 Device Programming for IoT. (Same as EST 342)

This course provides a hands-on introduction to programmable devices that may be used with the Internet of Things (IoT). The course covers essential electronics, device interfacing and programming for local monitoring and control. The use of Wi-Fi or Ethernet for monitoring and control via the Internet will be explored as well as security methods for IoT devices. Students will be required to purchase a microcontroller system ranging in cost between \$80-100. Lecture and Laboratory. A grade of C or better is required. Prerequisite: IST 209 with a grade of C or better.

ISAT343 - IoT OS Platforms 343-3 Internet of Things (IoT) Operating System Platforms. (Same as EST 343) The selection, configuration, installation, maintenance, and troubleshooting of industrial peer-to-peer and device level networks will be examined with the purpose of forming a complete industrial control network structure. The integration of various industrial control devices, components, and automation cells to form a complete automated control system will be examined. Safety and standard practices will be emphasized throughout the course. Students will be required to purchase a microcontroller system ranging in cost between \$100-130. Lecture and Laboratory. A grade of C or better is required. Prerequisite: ISAT 327 with a grade of C or better.

ISAT350 - Technical Career Subjects 350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credits to be individually arranged. This course may be classified as independent study. Special approval needed from the advisor.

ISAT358 - Work Experience Credit 358-1 to 30 Work Experience Credit. Credit will be granted via departmental evaluation of prior job skills, management-worker relations, and supervisory experience while employed in industry, business, the professions or service occupations. Credit will be established by school director evaluation. This credit may be applied only to the Major Requirements for degrees in the School of Information Systems and Applied Technologies. Restriction: Majors in the School of Information Systems and Applied Technologies.

ISAT360 - Information Assurance II 360-3 Information Assurance II. Students in this course will approach the topics of information assurance and security from the perspective of a large enterprise. Technologies and procedures used to improve an organization's security posture will be discussed and tested in hands-on lab exercises. An examination of modern security products and standard security protocols will accompany lab exercises. Lecture and laboratory. A grade of C or better is required. Prerequisite: ISAT 316 (with a grade of C or better) or consent of instructor.

ISAT365 - Data Apps & Interpretation 365-3 Data Applications and Interpretation. (Same as EST 365) This course will give students an understanding of the basic principles and techniques involved in the statistical treatment of data, including the selection of data sources, the design of statistical studies, and the analysis, synthesis, and utilization of data. Students will gain experience in using data for decision-making in their respective professions. Information Systems Technologies majors must earn a grade of C or better. Prerequisite: University Core Curriculum Mathematics with a grade of C or better.

ISAT366 - Apps of Technical Writing 366-3 Applications of Technical Writing. (Same as TRM 316 and PSM 316) This course will increase students' abilities in communicating various workplace documents common to technical disciplines. The course is designed to meet the writing portion of the College's Communication-Across-the-Curriculum initiative. A grade of C or better is required. Prerequisite: ENGL 101 with a grade of C or better. Restriction: College of Applied Sciences and Arts.

ISAT381 - Special Topics 381-1 to 9 Special Topics. Intensive study of selected topics relevant to the contemporary information management systems environment. Offered as need exists and as time and interests permit. May be repeated for up to nine hours total. Special approval needed from the advisor.

ISAT392 - Special Projects 392-1 to 6 Special Projects. Advanced undergraduate information management systems technologies students will work with current technology to solve problems and

develop projects in a team environment. A grade of C or better is required. Special approval needed from the instructor. Restricted to IST major.

ISAT407 - Industrial Control & Security 407-3 Industrial Control and Security. (Same as EST 407)

This course provides an in-depth look at control systems and networks particular to industrial processes. Security vulnerabilities and security measures to protect critical system will be explored. Upon completion of this course students will be able to perform risk assessment and make recommendations for threat detection monitoring of industrial control systems. Not for graduate credit. Grade of C or better required. Prerequisite: ISAT 417 with a grade of C or better.

ISAT411 - Info Storage and Mgmt 411-3 Information Storage and Management: Data, Drives, and Disaster Recovery. This course will provide students with fundamental understanding of a wide range of data storage devices, techniques, and systems ranging from individual standalone drives to large storage system clusters. Focus will be placed on enterprise storage systems in conjunction with lab exercises. Methods to create secure and recoverable storage systems and forensic discovery. A grade of C or better is required. Prerequisite: ISAT 224 (with a grade of C or better) or consent of instructor. Restricted to majors within ISAT.

ISAT415 - Enterprise Network Mgmt 415-3 Enterprise Network Management. This course teaches students about advanced services and application layer protocols used to support business communications in a complex enterprise network. Students will analyze technical business requirements in order to design and propose technology to meet those requirements. Implementation of the design using common technologies, software, and hardware will be performed as part of student lead lab exercises. Students will focus their network designs by implementing solutions relying on Microsoft Windows technologies. The integration of security principles within network designs is required. Lecture and laboratory. A grade of C or better is required. Prerequisite: ISAT 335 (with a grade of C or better) or consent of instructor.

ISAT416 - Adv Enterprise Network Mgmt 416-3 Advanced Enterprise Network Management. This course immerses students in additional advanced network services and application layer protocols used to support business communications in a complex and distributed enterprise network. Students will analyze technical business requirements in order to design and propose technology to meet those requirements. Implementation of the design using common technologies, software, and hardware will be performed as part of student lead lab exercises. Students will focus their network designs by implementing solutions relying on Linux and open source software and technologies. Demonstration of successful integration of security technologies and techniques is required. Lecture and laboratory. A grade of C or better is required. Prerequisite: ISAT 415 (with a grade of C or better) or consent of instructor.

ISAT417 - Wireless Comms & Security 417-3 Wireless Communications and Security. (Same as EST 404) This course provides a comprehensive overview of wireless communications through an examination of the wireless channel, signal modulation, encoding and transmission techniques, antennae theory and error control. Uses of wireless technologies in local, personal and mobile networks will be examined. An emphasis will be placed on security measures and techniques in wireless communications. A grade of C or better is required. Prerequisite: ISAT 216 and ISAT 224, each with a grade of C or better. Restricted to IST major.

ISAT418 - Cloud & Data Center Tech 418-3 Cloud Infrastructure and Data Center Technologies. During this course, students will sample the certification curriculum and materials from a variety of industry leading virtualization and data center products, technologies, and services. Students will learn about storage, computing, and network equipment required for cloud deployments. The class will use lab exercises to learn cloud and data center concepts using products and resources from many industry leaders using virtualization platforms. A grade of C or better is required. Prerequisite: ISAT 224 with a grade of C or better. Restricted to IST major.

ISAT419 - Occupational Internship 419-1 to 3 Occupational Internship. Each student is required to secure an internship at a business/industry work site which relates to the student's academic program and career objectives. The student will perform duties and services assigned by the work supervisor and internship coordinator, and will also complete reports and assignments. Minimum of 3 credit hours

required for Information Systems Technologies majors. Not for graduate credit. A grade of C or better is required. Prerequisites: ISAT 365 and 366 (each with a grade of C or better) or consent of instructor.

ISAT460 - Information Assurance II 460-3 Information Assurance II. This lecture/lab course focuses on design documentation and implementation of network security solutions that will reduce the risk of revenue loss and vulnerability. It is designed to enhance the student's skills and knowledge in three key areas of network security; firewalls, intrusion detection systems, and virtual private networks. The course combines instructor led, group-paced, classroom delivery, and learning models with structured hands-on activities. Lecture and laboratory. A grade of C or better is required. Prerequisite: ISAT 316 with a grade of C or better. Restricted to IST and EST majors.

ISAT491 - Seminar 491-3 Seminar. Students will examine a variety of information systems and technologies topics and/or problems. A grade of C or better is required. Special approval needed from the instructor. Restricted to IST major.

Information Systems and Applied Technologies Faculty

Caldwell, Paul N., Associate Professor, Emeritus, M.S. ED., Southern Illinois University, 1965.
Chung, Sam, Professor and Director of ISAT, Ph.D., University of South Florida, 1996.
Cook, F. Roger, Assistant Professor, Emeritus, M.S., Southern Illinois University, 1987.
Davis, Diane, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1990.
Devenport, William R., Associate Professor, Emeritus, M.S., Southern Illinois University, 1985.
Dotson, Michael, Assistant Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1986.
Einig, Raymond G., Jr., Assistant Professor, Emeritus, M.S., St. Louis University, 1962.
Evans, Candy Duncan, Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1992.
Fisher, Valerie, Assistant Professor, Emerita, M.S., Southern Illinois University Carbondale, 1975.
Gonzenbach, Nancy, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1990.
Harre, Paul A., Associate Professor, Emeritus, Ph.D., Southern Illinois University Carbondale, 1995.
Henry, Janice Schoen, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1987.
Hertz, Vivienne, Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1980.
Imboden, Thomas, Associate Professor, M.S., DePaul University, 2007.
Kearney, Brian, Assistant Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1990.
Legier, John, Associate Professor, Ph.D., Southern Illinois University Carbondale, 2007.
Magney, John, Assistant Professor, Emeritus, Ph.D., University of Michigan at Ann Arbor, 1977.
Martin, Nancy, Associate Professor, Ph.D., Southern Illinois University Carbondale, 2006.
Morgan, Barbara, Assistant Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1992.
Novak, Mary Ann, Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1987.
Preece, Linda, Assistant Professor, Emerita, M.S., Southern Illinois University Carbondale, 1984.
Rehwaltdt, Susan S., Assistant Professor, Emerita, Ph.D., Southern Illinois University, 1982.
Richard, Harold, Associate Professor, Emeritus, Ed.D., Pennsylvania State University, 1976.
Sheets, Leslie P., Associate Professor, Emeritus, M.S., Southern Illinois University Carbondale, 1976.
Shih, Stephen C., Professor, Ph.D., Pennsylvania State University, 1992.
Shin, Wangshik, Associate Professor, Emeritus, M.A., Southern Illinois University, 1963.
Sissom, James D., Associate Professor, M.P. Ad., Southern Illinois University Carbondale, 1996.
Stitt, Beverly A., Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1980.
Wang, Andy Ju An, Professor and Dean, Ph.D., Beijing University of Aeronautics and Astronautics, 1992.
Woodward, Belle S., Associate Professor, M.A., Webster University, 1997.

Information Systems Technologies

Information Systems Technologies is a baccalaureate degree major designed to prepare students for careers in a wide variety of work settings that rely on computerized information technologies to accomplish organizational goals. The curriculum recognizes that graduates must have good computer

application skills as well as an understanding of the principles of organizations and systems, including an awareness of technological, economic, political, social and cultural factors. Many courses require significant hands-on computer activities related to applications software, networking communications and computer troubleshooting and maintenance. Students may also choose ten courses from an approved list to reflect their personal interests in Information Systems Technologies.

Significant computer resources are available to students in this program for instructional purposes and for completion of assignments. The courses are based on a nationally recognized model curriculum, ACM/IEEE Information Technology Curricula (IT Curricula). Graduates of this program will meet the continuing needs of business and industry for personnel to use computer systems technologies within organizations utilizing end-user information systems. They will be able to supervise the planning and implementation of information systems in work/office environments, and deal with people, and procedures and equipment resources of companies in this country or abroad.

Students entering the Information Systems Technologies degree must be able to keyboard at a competency level adequate enough to complete a variety of computer related tasks and assignments (generally considered at 30 wpm or above). The Capstone Option is available to qualified students entering these programs. More information about the Capstone Option can be found at articulation.siu.edu/capstone/.

Information Systems Technologies offers an option for place-bound transfer students to complete the degree by taking advanced career and elective courses online. Refer to the department's website for detail.

The Information Systems Technologies program has signed a number of Program Articulation Agreements with computer/word/information processing-related community college degree programs in order to facilitate the transfer of community college students to SIU. These agreements take full advantage of the Capstone Option for admission to the Bachelor of Science in Information Systems Technologies. If you have questions about how these agreements apply to your personal situation, contact the school's program representative or contact the academic advisor in Information Systems Technologies at 618/453-7253 or <http://isat.siu.edu/undergraduate/information-technology/>.

Bachelor of Science Degree in Information Systems Technologies, College of Applied Sciences and Arts

Information Systems Technologies Major

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Recommend PHIL 104 or PHIL 105, and ECON 113, PSYC 102 or SOC 108	
Career Course Requirements - IST 209, ISAT 216, ISAT 224 ²	9
Requirements for Major in Information Systems Technologies	60
Required Major Courses	27
IST 314, IST 334, IST 336, IST 370, IST 404, IST 412, ISAT 365, ISAT 366, ISAT 419	
Approved Major Electives (Note: 15 hours must be at the 300- or 400-level) ³	33

Degree Requirements	Credit Hours
Cyber Security - ISAT 316, ISAT 335, ISAT 342, ISAT 415, ISAT 417, ISAT 460	
Network and System Administration - ISAT 327, ISAT 335, ISAT 411, ISAT 415, ISAT 417, ISAT 418	
Internet of Things (IoT) - ISAT 327, ISAT 342, ISAT 417, EST 308, EST 343, EST 407	
Web & Mobile App Development - IST 312, IST 403, IST 405, IST 422, IST 446	
IT/IS Management (online only) - IST 446, EST 385, EST 387, EST 388, EST 451	
Data Management - IST 345, IST 374, IST 470, IST 472, IST 473	
Applied Data Analytics - IST 371, IST 373, IST 374, IST 471, IST 472	
Additional Electives	12
Total	120

1 Students may meet these requirements through an approved AA/AS degree from an accredited community college.

2 Students may meet these requirements through an articulated approved AAS degree from an accredited community college.

3 The current approved list is on file in the school office.

Information Systems Technologies Courses

IST207 - Program Logic and Design 207-3 Programming Logic and Design. This course provides students with the foundation for computer programming covering topics such as problem analysis, flowcharting, pseudocode, and algorithm development. Concepts such as documentation, structured design and modularity are emphasized. The course also introduces topics in discrete mathematics such as number systems, sets and logic, relations and functions, and Boolean algebra. A grade of C or better is required.

IST209 - Intro to Programming 209-3 Introduction to Programming. This course is designed to introduce students to the design and development of logical solutions to business information processing problems. Upon completion, students will be able to develop algorithms, draw flowcharts and process files and tables using an appropriate computer programming language. Lecture and laboratory. A grade of C or better is required.

IST209G - Intro to Game Programming 209G-3 Introduction to Game Programming. This course is designed to introduce students to the design and development of logical solutions to game design. The course will cover basic concepts and techniques for developing computer games with the support of a game engine. Upon completion, students will be able to develop algorithms, draw flowcharts, and process files and arrays using an appropriate computer programming language. The course activities include

several programming assignments and the creation of a game as a final project. Required for the minor in Game Design and Development. A grade of C or better is required.

IST240 - Desktop Publishing Application 240-3 Desktop Publishing Applications. This course is designed to introduce students to basic and advanced desktop publishing concepts and applications. The student will develop an understanding of terms related to page assembly, topography, and other desktop publishing elements. The student will be able to describe basic desktop publishing design principles and apply them to the creation and production of documents including newsletters, flyers, and brochures. Lectures and lab. A grade of C or better is required.

IST259 - Occupational Educ Credit 259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by school director evaluation. This credit may be applied only at the 100 and 200 level unless otherwise determined by the department chair. Restricted to IST major.

IST299 - Individual Study 299-1 to 16 Individual Study. Provides student with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resource and facilities of the entire institution. Each student will work under the supervision of a sponsoring faculty member and school director. Special approval needed from the sponsor and school director.

IST306 - Android App Development 306-3 Android Application Development. Students will be introduced to concepts, models, and methodologies for developing applications that run on the Android platform. Students will gain hands-on experience creating and deploying mobile application for Android devices. The course will explore features such as networking, web services, cloud computing, location services, phone sensors, media, data persistence, speech recognition, and animation. A grade of C or better is required. Prerequisite: IST 209 (with a grade of C or better) or IST 209G (with a grade of C or better) or consent of instructor.

IST311 - Android Application Developmnt 311-3 Android Application Development. Students will be introduced to concepts, models, and methodologies for developing applications that run on the Android platform. Students will gain hands-on experience creating and deploying mobile application for Android services. The course will explore features such as networking, web services, cloud computing, location services, phone sensors, media, data persistence, speech recognition, and animation. A grade of C or better is required. Prerequisite: IST 209 (with a grade of C or better) or IST 209G (with a grade of C or better) or consent of instructor.

IST312 - Programming II 312-3 Programming II. This course is designed to enable the student to use advanced programming techniques in the design and implementation of business application programs. Topics will include object-oriented programming, classes, inheritance, graphic user interfaces, and database access. A grade of C or better is required. Prerequisite: IST 209 (with a grade of C or better) or consent of instructor.

IST314 - Ethics & Legal Issues in IT 314-3 Ethical and Legal Issues in IT. This course introduces students to the issues and controversies that comprise the field of Cyberethics. It treats Cyberethics as an interdisciplinary field of study and aims at addressing those in the information technology, information security and networking fields of study. This course covers key concepts/terms, actual case examples and hypothetical scenarios involving privacy, security, intellectual property, and speech in cyberspace to illustrate ethical controversies that convey the seriousness of the issues under consideration. These concepts and cases receive reinforcement with review/study and discussion/essay questions to facilitate readers' comprehension and reflection of ethical issues. A grade of C or better is required. Restricted to IST major.

IST334 - Database Design & Processing 334-3 Database Design and Processing. This course is designed to provide students with essential knowledge and pragmatic skills of databases design and processing. Essential topics include database development life cycle, conceptual data modeling, logical database design and normalization, and query languages. For hands-on learning, this course focuses on the use of relational database management systems to construct database system objects, such as tables, queries, and SQL code. A grade of C or better is required.

IST336 - Web-based Applications 336-3 Web-based Applications in Information Systems. This course is designed to provide students with skills on the fundamentals of client-side web development languages used to build professional websites, such as HyperText Markup Language (HTML), Cascading Style Sheets (CSS) and JavaScript. The course introduces Web standards, Web Design principles, and Web Design and Development tools. Hands-on assignments will provide students with practical experience developing interactive Web pages and websites using client-side technologies. A grade of C or better is required. Prerequisite: IST 209 with a grade of C or better. Restricted to IST major.

IST345 - Informatics in Prof Fields 345-3 Informatics in Professional Fields. This course introduces students to the field of informatics. Informatics is computing in context, or applying information technology to convert data and information into useful knowledge to solve big problems. Informatics has applications in arts, sciences, business, and professions. Students will explore the fundamentals of informatics in a specific professional field such as healthcare, marketing, finance, media, entertainment, or others. A grade of C or better is required. Restricted to IST major.

IST350 - Technical Career Subjects 350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions and health service occupations offered through various workshops, special short courses and seminars. Hours and credit to be individually arranged. Course may be classified as independent study. A grade of C or better is required. Restricted to IST major.

IST351 - Readings 351-1 to 6 Readings. Selected readings in specific information systems topics not ordinarily covered in depth in other courses. Special approval needed from the instructor.

IST358 - Work Experience Credit 358-1 to 30 Work Experience Credit. Credit will be granted via departmental evaluation of prior job skills, management-worker relations, and supervisory experience while employed in industry, business, the professions or service occupations. Credit will be established by school director evaluation. This credit may be applied only to the Major Requirements of the Information Systems Technologies degree. Restriction: IST major.

IST370 - Database Programming SQL 370-3 Database Programming with SQL. This course is designed to provide students with pragmatic skills of database programming with Structured Query Language (SQL). Students will learn to create and maintain database objects (e.g., tables and views) as well as insert and manipulate data. Other important topics include basic queries, advanced queries (e.g., subqueries), joining data from multiple tables, and single-row and group functions. A grade of C or better is required. Prerequisite: IST 334 (with a grade of C or better) or consent of instructor.

IST371 - Intro Applied Data Analytics 371-3 Introduction to Applied Data Analytics. Overview of the process of data analysis. Data analytics have moved out of the academic world of statisticians to the practical world of technology. A variety of user friendly technologies bring powerful analytical capabilities to end users. Three major areas that comprise analytics are reporting, visualization and prediction. This course uses the latest in technology to show the practice of data analytics in the real world. You will experience practical applications of analytics through guided exercises and case studies. A grade of C or better is required. Restricted to IST major or consent of school.

IST373 - Data Science-Python 373-3 Applied Data Science with Python. This course introduces students to applied data science through Python programming language. Important topics include exploration of Python language fundamentals (lists, functions, packages, arrays, etc.), applications of data science techniques to gain business intelligence and new insight into the data as well as data visualization and representation in Python. A grade of C or better is required.

IST374 - Data Analytics with R 374-3 Applied Data Analytics with R. This course is designed to help students develop an understanding of fundamental data mining & data analytics methods and tasks. Important topics include data importing & exporting, data exploration, and data visualization. Selected data mining tasks (e.g., time series analysis) will be covered. The lectures are complemented with hands-on learning experience with the use of a powerful open source language, R. A grade of C or better is required. Restricted to IST major or consent of school.

IST392 - Special Projects 392-1 to 6 Special Projects. (Same as MCMA 499) Students will work with current technology to solve problems and develop projects in a team environment. Restricted to IST major. Special approval needed from the instructor.

IST403 - Client-Side Web Development 403-3 Client-Side Web Development. This course is designed to provide students with skills on advanced client-side web development languages and technologies used to build dynamic web applications. Strong knowledge of Object-Oriented programming, HTML5, CSS and JavaScript is required. The course introduces JavaScript frameworks and libraries, declarative templates, APIs, responsive design, design patterns, data interchange formats, and data storage. A grade of C or better is required. Prerequisites: IST 312 and IST 336, each with a grade of C or better. Restricted to IST major.

IST404 - IT Project Management 404-3 Information Technology Project Management. Combines theory and techniques of project management emphasizing information technology applications. The course adheres to the Project Management Body of Knowledge (PMBOK) using case studies to cover the PMBOK process areas. Students will apply project management skills. Course concepts are strengthened by the use of automated project management software. A grade of C or better is required. Not for graduate credit. Prerequisite: IST 334 with a grade of C or better or consent of instructor.

IST405 - Server-Side Web Dev 405-3 Server-Side Web Development. This course provides a comprehensive introduction to programming tools and skills used to construct web server platforms. Students will gain hands-on experience with server-side technologies, such as PHP, JSP, and Ajax. In addition, web database access will be introduced. Grade of C or better required. Prerequisite: IST 312, IST 336, IST 370 (each with a grade of C or better) or consent of instructor.

IST406 - Assistive Tech & Acc Web 406-3 Assistive Technologies and Accessible Web Design. This course examines how people with disabilities use computer technology and access electronic information. Topics include the history, characteristics, and service delivery of assistive technologies, web site evaluation and repair, design of universally accessible web resources, and major legislative initiatives applied to ameliorate problems faced by persons with disabilities. A grade of C or better is required. Not for graduate credit. Prerequisite: IST 336 with a grade of C or better or consent of instructor.

IST412 - IS: Analysis & Design 412-3 Information Systems: Analysis, Design, and Implementation. This course is designed to provide students with essential knowledge and pragmatic skills of information system analysis, design, and implementation. Special topics include systems development life cycle methodologies, system analysis and modeling methods, technical design specifications development, business forms and reports design, query languages, and information systems integration. In addition, students are expected to conduct projects to build field-based information system applications. A grade of C or better is required. Prerequisites: IST 334, ISAT 365, ISAT 366 or equivalent, each with a grade of C or better. Restricted to IST major.

IST414 - Trends & Issues in Info Sys 414-3 Trends and Issues in Information Systems. Explores special topics related to the nature, types, role, and impact of information systems in organizations and methodological concepts for understanding information systems in the future. Students will envision, identify, evaluate, select, and recommend computer-based technologies/solutions for organizational problems. Not for graduate credit. A grade of C or better is required. Prerequisite: ISAT 366. Restricted to IST major.

IST415 - Cases in IST 415-3 Cases in Information Systems Technology. Using case studies, this course involves the analysis, synthesis, application and evaluation of advanced concepts related to information systems. Grade of C or better required. Not for graduate credit. Prerequisites: IST 334 and ISAT 366 with a grade of C or better, or consent of instructor.

IST422 - Mobile Programming 422-3 Mobile Programming. This course is designed to introduce students mobile computing with a strong emphasis on application development for the mobile operating system. It gives students a solid foundation for developing and deploying their own apps onto the mobile market place. Topics will include the mobile development environment, user interfaces, audio, persistence, SQLite databases, location, sensors, and graphics. Lecture and laboratory. A grade of C or better is required. Prerequisite: IST 312 with a grade of C or better.

IST426 - App Devlp Environments 426-3 Application Development Environments. This course is designed to allow students to develop computer applications using an object-oriented programming language. Topics will include the usage of an application development environment, subprocedures, menus, database files and graphics. Grade of C or better required. Not for graduate credit. Prerequisite: IST 209 with a grade of C or better or consent of instructor. Restricted to IST major.

IST436 - Adv Web-based App Development 436-3 Advanced Web-based Application Development. Students will gain hands-on experience with web development using client-side and server-side scripting languages to create dynamic web pages and applications that access databases. This is an advanced programming course that requires good knowledge of HTML, computer programming, database, and SQL. A grade of C or better is required. Not for graduate credit. Prerequisite: IST 405.

IST441 - IST Profession 441-3 The Information Systems Technologies Profession. This course engages students in research and advanced study related to the Information Systems Technologies (IST) profession. Topics include, but are not limited to: the historical development of the profession; trends and future directions of information systems technologies in the global economy; professional standards and ethics; related professional organizations; and employment opportunities for information systems professionals. Each student is required to complete a separate research report that is related to the student's career goals. Concurrent enrollment in one semester hour of 350 is required. Grade of C or better required. Not for graduate credit. Restricted to IST major.

IST446 - Software Engineering & Mgmt 446-3 Software Engineering and Management. Students will be introduced to software engineering concepts, models, and methodologies that will help them develop skills to construct high quality, reliable, and easy to maintain large scale software systems. Topics include: software process models, design methods, quality assurance, configuration management, testing, maintenance, etc. Grade of C or better required. Not for graduate credit. Prerequisite: IST 209 (with a grade of C or better) or consent of instructor. Restricted to IST major.

IST452 - Research 452-1 to 3 Research. The selection, investigation, research and writing on a specific topic approved by a faculty member. Not for graduate credit. Special approval needed from the school. Students can take this course across multiple semesters with variable credit hours (maximum 6). A grade of C or better is required. Restricted to IST major.

IST470 - Adv Database Concepts 470-3 Advanced Database Concepts. This course is designed to give students a conceptual understanding of database architecture and administration. Students will gain the necessary knowledge and skills needed to install, configure, set up, maintain, and troubleshoot a database. Other essential database administrative tasks will be covered. Grade of C or better is required. Not for graduate credit. Prerequisite: IST 370 with a C or better or consent of instructor.

IST471 - Data Analytics-SQL 471-3 Applied Data Analytics with Advanced SQL. This course is designed to help students develop an understanding of essential concepts and techniques of applied data analytics using advanced SQL analytic functions, such as ranking, windowing, linear regression, hypothetical rank and distribution, etc. Students will gain hands-on learning experience through formulating data analytics problems and building analytic queries in SQL. A grade of C or better is required. Prerequisite: IST 370 with a grade of C or better. Restricted to IST major.

IST472 - Machine Learning with R 472-3 Machine Learning with R. This course helps students get familiar with basic tasks of machine learning, such as concept learning, function learning (predictive modeling), and clustering predictive patterns. Students will learn to choose among machine learning models as well as prepare, examine, and visualize data for machine learning. For pragmatic learning experience, students will solve business applications by applying common machine learning algorithms and building machine learning models in R. A grade of C or better is required. Prerequisite: IST 374 with a grade of C or better. Restricted to IST major.

IST473 - Advanced DB Programming 473-3 Advanced DB Programming. This course introduces students to advanced database programming using PL/SQL, Oracle's procedural extension language for SQL. PL/SQL code is used to automate and extend SQL, to administer the Oracle database, and is often embedded in or called from other software programs created in Java, C++, C#, PHP, and others. Course coverage includes language elements, variables and data types, cursors, decisions, loops, procedures,

functions, packages, triggers, debugging, exception handling, and other topics. A grade of C or better is required. Prerequisites: IST 209 and IST 370, both with C or better. Restricted to IST major.

IST491 - Seminar 491-3 Seminar. Students will examine a variety of information systems technologies topics and/or problems. Not for graduate credit. Special approval needed from the school.

Journalism

The School of Journalism at Southern Illinois University Carbondale occupies a national leadership role in mass communication education at a time of revolutionary change. The technology of communication is changing faster than any time since the invention of movable type. The School of Journalism is keeping pace with these historic changes by expanding coursework in areas including web, video, audio and multimedia skills, while continuing to reinforce knowledge vital to journalists of all areas - clear writing, clear thinking, law, ethics and history.

The program combines a detailed understanding of the practice of journalism in modern society with a broad knowledge of the liberal arts. Students acquire specific skills necessary to become professionals in advertising, news editorial, sports journalism, photojournalism or other communication fields. Students develop in-depth knowledge by completing the requirements of a structured minor in a subject area outside the College of Mass Communication and Media Arts and related fields. The curriculum prepares students for positions of responsibility in a broad array of fields in which the ability to communicate is essential. New specializations include Journalism and Mass Communication, and Sports Media. The School is now offering an Online Degree and Certificate Programs in Journalism and Mass Communications for non-resident students. The School of Journalism also prepares students for graduate studies in mass communication, the social sciences and law.

The School of Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communication, University of Kansas, School of Journalism Stauffer-Flint Hall, Lawrence, KS 66045, the agency formally recognized by the Council on Postsecondary Accreditation and the U.S. Office of Education. Prospective students should be aware that excellent written and oral language skills are essential for successful careers in the journalism field. With this in mind, the School of Journalism has adopted admission and retention standards that emphasize language facility and academic proficiency.

While most students are best served by one of the following specializations, other programs of study in the major may be designed to meet specific needs.

ADVERTISING

Students in the advertising specialization learn to analyze problems in, and identify solutions for, the promotion of goods and services. They develop skills in verbal and visual communication and presentation of materials. Instruction emphasizes copywriting, branding, new media mobile advertising, media planning, consumer research, account planning and campaign planning. Graduates are prepared to enter a wide variety of positions with marketing communications firms; including advertising, sales promotion, public relations and direct marketing agencies.

JOURNALISM AND MASS COMMUNICATION

The Journalism and Mass Communication specialization is designed to give students a broad knowledge base and set skill in advertising and news editorial areas. Diversification and entrepreneurial competence are highly valued in today's media industry. Coursework in fundamentals in writing and new media are required in the field. This specialization allows students a more flexible path in choosing the other areas of journalism they want to advance in for the variety of ever changing professions emerging in media today. The specialization also provides students with the needed foundations of ethical, legal and research oriented coursework to make sure they maintain a high level of professionalism.

NEWS EDITORIAL

As the communication revolution expands the ways in which news and information can be presented, the need increases for individuals with the ability to prepare and present news and information precisely and accurately for a variety of media. Students in the news specialization receive practical training in the theory and practice of identifying, gathering, processing, interpreting, writing and presenting news for traditional print, broadcast and new media. News students are encouraged to take photo, video and audio classes and apply these skills in our converged newsroom. The Daily Egyptian is over a 100-year-old student run newspaper.

PHOTOJOURNALISM

Students in the photojournalism specialization develop the photographic and news reporting skills necessary to communicate visually with a mass audience through contemporary media outlets - both printed and electronic. Photojournalism students receive practical training in gathering, writing, photographing, editing and presenting news and feature stories in which the essential information is photographic. The program remains on the cutting edge by integrating traditional instruction in a digital environment with new media skills in website development, audio and video production. Graduating students are fully aware of the power of photography, are well grounded in the legal and ethical traditions of the profession and are practically prepared to make a significant contribution to contemporary journalism.

SPORTS MEDIA

The proliferation of sports programming in both traditional and new media is triggering an increasing demand for graduates with sports production, sports promotion and sports journalism backgrounds. The School of Journalism and the Radio, Television, & Digital Media Department have joined forces to establish specializations in both academic units. The School of Journalism's specialization has two tracks. One prepares students for sports reporting, the other for sports promotion. The reporting track includes new sports courses and essentials from the news/editorial specialization. The promotions track adds new sports courses to essentials of the advertising specialization.

ONLINE CERTIFICATE IN JOURNALISM AND MASS COMMUNICATION

There is an increasing demand for trained personnel with skills in writing for the mass media. Organizations such as website content providers, publishers, colleges and universities, non-profit organizations and traditional media outlets are all looking for students who can provide content for their publications. Careers for students with journalism and advertising skills include, but are not limited to: News Reporter/Editor, Online Journalist, Web Content Producer, Advertising Copywriter, Grant Writer, News Service Writer, Newsletter Writer/Editor, Public Relations Specialist, Publications Specialist, Sports Information Director and Technical Writer, Book Editor, etc. The School of Journalism, in partnership with the SIU Extended Campus office, offers unique Online Degree and Certificate programs allowing non-resident students the opportunity to build and enhance media related knowledge and skills needed in the media industry and in education.

Admission Standards

To be admitted to the School of Journalism, applicants must meet the following requirements: Beginning freshmen must meet the University's regular admission requirements. Transfer students who have completed fewer than 26 semester hours must meet the requirements for beginning freshmen and have earned an overall collegiate grade point average of at least 2.00 (4.0 scale). Transfer students who have completed more than 26 semester hours must have earned an overall collegiate grade point average of at least 2.00.

Students currently enrolled or who were previously enrolled at SIU in another major must meet the same requirements as transfer students. If they have completed more than 26 semester hours they must have an overall grade point average of at least 2.00. Students with fewer than 26 semester hours must meet beginning freshmen requirements as well as have a grade point average of at least 2.00. Grade point average is calculated for purposes of admission to the School of Journalism by using all grades earned at SIU and other collegiate institutions.

Retention Policies

Students majoring in journalism must meet these retention requirements to continue their enrollment in the major: Students who have completed 26 semester hours or more must have an accumulative SIU grade point average of 2.00 or higher.

A grade of C or better is required in all journalism courses in order to be counted toward the major or minor and to satisfy prerequisite requirements.

Strong skills in the use of the English language are required to enter the first upper level writing courses in the School of Journalism: JRNL 302 or JRNL 310. Students may demonstrate proficiency in the use of the English language with an English ACTE subscore of 22 or higher, or by earning a grade of C or higher in ENGL 300 or JRN 201. This prerequisite must be successfully completed prior to registration for any course for which the prerequisite is required. Students must pass a grammar test prior to admission to either JRNL 310 or JRNL 302 as well. Information concerning the grammar test is available by contacting the School of Journalism main office.

Students who are unable to meet retention requirements will be placed in probationary status within the School of Journalism. These students will be given one semester to correct their deficiency prior to dismissal. Those who are dismissed from the School of Journalism but are eligible to continue in the University will be placed in Pre-Major advisement or may request permission to enter another collegiate unit.

Other Requirements

Enrollment in Journalism courses may be canceled for students who do not attend the initial class session of the semester. Fees will be assessed for supplies and materials in some courses. Students should inquire about amounts before registering. Subject to the approval of the School's director, undergraduate students may receive as many as nine hours of transfer credit toward journalism course requirements.

Academic Advisement

A student planning to major in Journalism should consult the school's academic advisor as early as possible in order to discuss the degree requirements for the specialization chosen. After admission to the major in journalism, the student will be expected to visit the academic advisor each semester until all major requirements have been completed.

Bachelor of Science Degree in Journalism, College of Mass Communication and Media Arts

The academic requirements for the Bachelor of Science degree in journalism include: (1) six hours of journalism: JRNL 201 and JRNL 202 and (2) 33 hours in journalism specialization coursework. Students will also complete a minor in an area approved by the School of Journalism.

The School of Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communication (ACEJMC). As a result, there are ACEJMC requirements that must be met. A major must complete a minimum of 72 semester hours outside of journalism and mass communication related courses. The student, with the assistance of the journalism academic advisor, should exercise care in course selection to assure that these requirements are met.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Journalism Core Courses	6
JRNL 201 and JRNL 202	

Degree Requirements	Credit Hours
Specialization Requirements: 33 credit hours	
Advertising Specialization:	33
JRNL 301, JRNL 302, JRNL 304, JRNL 335, JRNL 405, JRNL 406, JRNL 407, CMST 281, plus three approved JRNL electives.	
Journalism and Mass Communication Specialization:	33
JRNL 160, JRNL 301, JRNL 302, JRNL 310, JRNL 332 or JRNL 405, JRNL 407 or JRNL 434, plus five approved JRNL electives.	
News Editorial Specialization:	33
JRNL 310, JRNL 311, JRNL 312, JRNL 332, JRNL 335, JRNL 434, two of either JRNL 313, JRNL 396, or JRNL 435 and three approved JRNL electives (two must be at 400 level).	
Photojournalism Specialization:	33
JRNL CP 102 (or approved JRNL elective), JRNL 310, JRNL 311, JRNL 313, JRNL 332, JRNL 412, JRNL 413, JRNL 434, JRNL 495, and two JRNL electives.	
Sports Media Specialization:	33
Sports Media Reporting: RTD 321, JRNL 310, JRNL 311, JRNL 312, JRNL 332, JRNL 335 or JRNL 396, JRNL 434, JRNL 481, JRNL 488 plus two JRNL electives. Sports Media Promotion: RTD 321, JRNL 301, JRNL 302, JRNL 304, JRNL 310, JRNL 335 or JRNL 396, JRNL 407, JRNL 481, JRNL 488 plus two JRNL electives.	
Minor	15
Internship hours and/or electives by advisement	27
Total ¹	120

1 (72 must be outside mass communications fields)

Journalism Optional Three-Year Curriculum Plan

The School of Journalism offers a three-year graduation plan for students entering the program as freshmen. Students who attempt to pursue this plan will successfully complete an average of 40 credit hours per academic year. For more information, please contact the School of Journalism academic advisor.

Journalism Minor

A total of 15 hours of journalism courses at the 300 level or higher, at least one of which must be a writing course (JRNL 302 or JRNL 310), constitutes a minor for nonjournalism majors. All courses for minors in Journalism must be completed with a grade of C or higher.

Journalism minors can emphasize any of our specializations, i.e. Advertising, News Editorial, Photojournalism, Sports Media, or Journalism and Mass Communication. The School's academic advisor is available to assist students in designing a minor emphasis.

Online Certificate in Journalism and Mass Communication

Students will need to complete 30 credits of Journalism online courses (ten courses total/3 credits each) with a grade of C or better to complete the Online Certificate. JRNL 201 and one of JRNL 332, JRNL 407, or JRNL 434 must be completed as part of the 30 credit hours required for completion. All prerequisites or approvals must be satisfied prior to taking a course. The courses are offered through the SIU Extended Campus office.

Journalism Courses

JRNL160 - Mass Communication in Society 160-3 Mass Communication in Society. Acquaints students with the history and development of the American mass media. Examines media roles in society, potential for development, weak points, and the roles consumers can and should play regarding the media.

JRNL201 - Writing Across Platforms 201-3 Writing Across Platforms. Explores the concept of convergence in media writing while developing a basic understanding of journalism principles and writing skills for newspapers, online news, magazines, public relations, television and radio; develops skills in word usage, grammar, spelling and AP style for print and broadcast. Course Fee: \$42.

JRNL202 - Creativity/Platforms 202-3 Creativity Across Platforms. Provides the basic understanding of the fundamentals of new media. Introduces students to the different software and tools that are increasingly being used in the news industry in order to tell stories and deliver content via multiple platforms. Students will learn how to create content by utilizing and integrating different content modalities such as text, audio, photographs and video. Course Fee: \$42.

JRNL290 - Writing Concepts/Media 290-3 Writing Concepts for Media Professions. Develops language skills required by the mass media, with an emphasis on grammar and AP and APA style as applied to journalistic problems and media research. Includes study of representative works by masters of journalistic writing. Taught with mastery learning techniques.

JRNL301 - Principles Advertising/IMC 301-3 Principles of Advertising/IMC. [IAI Course: MC 912] An introduction to integrated marketing communications elements, including advertising, direct response, sales promotion and marketing public relations, and their functions in today's communication environment. Explores research, media and message elements involved in the creation of a campaign; governmental regulations; and social and economic considerations.

JRNL302 - Copywriting 302-3 Copywriting and Creative Strategy for Advertising. Study of the principles and practice in the writing of copy and visual design of persuasive messages such as advertising, sales promotion, direct response, marketing, public relations and others. Includes writing for print and broadcast media, across products and services and oral presentation of materials. Prerequisite: ACTE English subscore of 22 or higher or grade of C or higher in ENGL 300 or JRNL 201, and JRNL 301. Lab fee: \$42.

JRNL303 - Creating Ad Messages 303-3 Creating Advertising/IMC Messages. Examination of and practice in the development of persuasive message strategies and the writing and design of messages for all media advertising, direct response, sales promotion and marketing public relations, and oral presentations of IMC materials. Prerequisite: JRNL 301, 302 and ACTE English subscore of 22 or higher, or grade of C or higher in ENGL 290 or LING 290.

JRNL304 - Advertising Media 304-3 Placing Advertising Messages in the Media. Examination of the various media systems/types available to carry advertising creative messages. Emphasis is given to both the development of advertising media objectives and strategies in the context of a media plan, as well as the steps involved in the actual negotiation of specific media vehicles. Prerequisite: JRNL 301.

JRNL305 - Direct Response Adv/IMC 305-3 Direct Response Advertising/IMC. Overview of direct response advertising and its measurability; the media involved; and the strategic, tactical and creative approaches. Introduces topics such as database management, mailing lists, telemarketing, lead generation program, catalog marketing, sales promotion and business-to-business marketing communications. Prerequisite: JRNL 301, 302 and MKTG 304.

JRNL306I - Internatl Media Systems 306I-3 International Media Systems. (University Core Curriculum) An overview of the mass media systems of the world; comparison of theoretical models and actual practice. Explores differing conceptual models of the mass media and their underlying philosophies; actual operations of different press systems with specific economic, political and cultural structures including historical development and current status.

JRNL307 - Interactive Advertising/IMC 307-3 Interactive Advertising/IMC. Explores the development of interactive media and their impact on integrated marketing communication and consumer behavior. Analyses the use of new media in brand building, business-to-business communication, direct response, database marketing, and sales promotions. Includes examination of strategic, planning, and communication aspects of Web sites, online advertising, e-mail marketing, CD-ROMs, interactive presentations, interactive kiosks, and more. Provides principles such as user experience, content organization, navigation development, and interface design necessary to develop persuasive interactive marketing materials. Prerequisite: JRNL 301. Course fee: \$42.

JRNL310 - Writing for the Mass Media 310-3 Writing for the Mass Media. [IAI Course: MC 919] Emphasis on mass media writing styles; basic principles of editing; the techniques of information gathering and reporting; story organization; the use of library and on-line sources; and other basic news gathering skills. Prerequisite: ACTE English subscore of 22 or higher or grade of C or higher in ENGL 300 or JRNL 201. Lab fee: \$42.

JRNL311 - Reporting & News Writing 311-3 Reporting and News Writing. Continues development of news reporting skills for all media. Emphasizes personal interviews, development and use of news sources, analysis of public records, news beats and specialized reporting structures, and the professional working relationship between the writer and other news personnel. Prerequisite: JRNL 310. Lab fee: \$42.

JRNL312 - Editing 312-3 Editing. [IAI Course: MC 920] Introduces principles and techniques of editing and information management. Course emphasizes the editing of body copy and display type for maximum clarity and impact in a wide variety of news media including print, broadcast, and new media publications. Prerequisite: JRNL 310. Lab fee: \$42.

JRNL313 - Basic Photojournalism 313-3 Basic Photojournalism. Includes basic camera technique, digital photo imaging methods and evaluation of pictorial communication effects. Discusses the history and ethics of the profession. Student supplies own materials. Lab fee: \$52.

JRNL314I - Politics and Media 314I-3 American Politics and the Mass Media. (University Core Curriculum) (Same as POLS 314I) The role of the mass media in American politics. Emphasis will be on the way in which the news media covers political actors and institutions, the effects of media on political behavior, and the expanding role of the internet in politics.

JRNL332 - Journalism Law 332-3 Journalism Law. Examination of the constitutional law of press censorship, of libel and privacy, of commercial speech and its regulation, of copyright and trademark, of access to government proceedings, and of confidentiality in newsgathering.

JRNL334 - Ethics-Media/Culture/Society 334-3 Ethics in Media, Culture and Society. (University Core Curriculum) (Same as PHIL 334) The purpose of this course is to discuss what it means to act ethically. Does it mean anything more than doing what is right? Are ethics for a lawyer different from a journalist or priest or doctor? How does society decide what is ethical behavior and what is not?

JRNL335 - Graphic Communication 335-3 Graphic Communication. Explores the history of visual communication with an emphasis on the integration of text and graphic images through design. Introduces fundamental design principles and the basics of typography, color usage, picture editing, and project management, all within the context of changing communication technology and production methods. Lab fee: \$42.

JRNL337 - Video/Online Journalism 337-3 Video for Online Journalism. Introduces professional shooting and editing techniques to students interested in producing video stories within integrated new media storytelling for online journalism. Conduct pre- and post-production work to develop, investigate and report online news stories in a converged media environment. Prerequisite: JRNL 311 and 313 or consent. Lab Fee: \$42.

JRNL340 - Media and Visual Culture 340-3 Media and Visual Culture. This course introduces ways of reading, analyzing, and interpreting visual media, so that we may become careful and critical observers. The goal of the course will be to understand how people both communicate meanings visually and produce visual images for media. Themes and topics to be covered include how images function as signs; politics, propaganda, and power; fashion; scientific and medical imagery; advertising and the commodification of visual images; gender and sexuality; and the global circulation of visual information. The course will draw on numerous historical and contemporary examples from journalism and advertising, film, art and architecture, television, new media and other forms of visual communication and culture. The course will be a combination of lectures and discussions, with assignments designed to help students sharpen their critical viewing, reading, and writing skills.

JRNL360 - Magazine Mgmt & Production 360-3 Magazine Management and Production. The day-to-day operations of a magazine and the techniques involved in producing a magazine. A combination of lectures and workshops in which the professor will deal individually with student projects. Each student will produce an original magazine idea and bring it to, at least, the semi-comprehensive stage of development. Lab fee: \$42.

JRNL396 - Publishing to the WWW 396-3 Publishing to the World Wide Web. The class provides instruction in designing for the WWW. Students learn the basics of HTML, and are provided an opportunity to develop literacy in networked, interactive communication. Students learn the basics of good interface design and apply these skills in interactive multimedia such as interactive news and information display, training development, business marketing applications, asynchronous learning materials, and entertainment products.

JRNL399 - First Freedoms 399-3 First Freedoms. (University Core Curriculum) (Same as PHIL 399) The First Amendment protects citizens from the government and sets boundaries for democratic self-government. The course encompasses free expression in all media-social, broadcast and cinema. It explores tensions between law and ethics, press freedom and privacy, intellectual freedom and equality and liberty and security.

JRNL400 - History of Journalism 400-3 History of Journalism. Development of American newspapers, magazines, and radio-television with emphasis on cultural, technological, and economic backgrounds of press development. Current press structures and policies will be placed in historical perspective.

JRNL402 - Advanced Creative Strategies 402-3 Advanced Creative Strategies. Examination of and practice in the development of persuasive, strategic campaigns and message strategies for multiple clients. Creation of a professional quality portfolio demonstrating proficiency in both traditional and new media required. Prerequisite: JRNL 302.

JRNL403 - Media Sales 403-3 Media Sales. Historical perspective of media and sales philosophies and tactics grounded in sales ethics. Learn and apply relationship selling techniques enabling students to become media advertising consultants. Learn how to effectively work with local clients, agencies and national firms and balance the goals of management with the needs of clients while enhancing communication effectiveness. Prerequisite: JRNL 302 and 304.

JRNL404 - Advanced Media Strategy 404-3 Advanced Media Strategies and Planning. Provides an understanding of the factors that influence media strategy. Emphasis will be placed on advanced concepts such as building reach patterns, calculating effective frequency levels, in order to develop an

effective media plan. Introduces media planning for the web and other new media options. Prerequisite: JRNL 304.

JRNL405 - Intro to Mass Comm Research 405-3 Introduction to Mass Communication Research. Overview of communication research methods including practical training in interpretation and presentation of social science data. Introduction to survey research methods, experimental design, and use of computers for analysis of data. Presentation of data in journalistic forms and social science reports. Not for graduate credit. Prerequisite: JRNL 201 or instructor/departamental approval.

JRNL406 - Advertising Campaigns 406-3 Advertising Campaigns. Conceptual synthesis and practical application of business, research, media and creative principles used in the formation of persuasive messages. Includes the development of a complete campaign for a specific advertiser. Includes all relevant target audience contact points (e.g., advertising, sales promotion, marketing public relations, event marketing, packaging) and both written and oral presentation of the campaign. Prerequisite: JRNL 304 and JRNL 405 with grades of C or better.

JRNL407 - Social Issues & Advertising 407-3 Social Issues and Advertising. Analysis of social issues involving advertising; economic relationships, government and self-regulation, cultural effects, influence on media content and structure, role in democratic processes, international comparisons and the stereotyping of women, minorities and other audience segments.

JRNL409 - Special Topics Advertising/IMC 409-3 Specialized Topics in Advertising/IMC. New developments in advertising and integrated marketing communications. Topics change each term. Repeatable up to three times as long as the topic changes. Students should check specific topic and any special requirements and prerequisites before enrolling.

JRNL410 - Multi-Media Project 410-3 Multi-Media Publication Project. All journalistic skills and tools will combine to produce a report on a public issue important to southern Illinois. The report will be published both in hard copy and on the web. Students will have an opportunity to hone skills they already have learned or to learn new skills that broaden their repertoire. Prerequisite: JRNL 310 or 413 or consent. Lab fee: \$42.

JRNL411 - Public Policy Reporting 411-3 Public Policy Reporting. Continued development of reporting skills with emphasis on the reporting of public policy issues and on use of statistics, the analysis of computerized data bases, and advanced techniques for the investigation of complex stories. Prerequisite: JRNL 311 or consent of instructor.

JRNL412 - Images and Sound 412-3 Images and Sound. Photojournalism course advancing news gathering techniques, visual and interactive journalistic communication, and photographic content and sound. Audio recording, editing, and flash photography skills will be developed and professional and ethical aspects of photojournalism will be emphasized. Prerequisite: JRNL 313 or consent of instructor. Lab fee: \$42.

JRNL413 - Advanced Photojournalism 413-3 Advanced Photojournalism. Emphasis on in-depth photojournalistic reporting. Students research, write and photograph picture stories. Examines ethics, history and social role of photojournalism domestically and internationally. Digital imaging and an introduction to full-motion video. Students must have fully adjustable camera. Prerequisite: JRNL 412. Student supplies own materials. Lab fee: \$64.

JRNL414 - Picture Story 414-3 Picture Story and Photographic Essay. Production of photographic stories and essays for newspapers, magazines and news media presentations. Students discuss, research, photograph, design and write several stories and essays, while studying the work of influential photojournalists. Student must supply own camera equipment. Prerequisite: JRNL 412 or consent of instructor. Lab fee: \$42.

JRNL416 - Critical & Persuasive Writing 416-3 Critical and Persuasive Writing. The roles and responsibilities of the editor, editorial writer, and opinion columnist with emphasis upon editorial writing and critical thinking. Editorial problems, methods, policies, style and the fundamentals of persuasion and attitude change form the basis for study. Prerequisite: JRNL 311.

JRNL417 - Freelance Feature Writing 417-3 Freelance Feature Writing. Identification, research and application of creative writing techniques in producing feature articles for various media. Students analyze reader appeal as well as feature story structure and methods of marketing features to various audiences and publications. Prerequisite: JRNL 310. Lab fee: \$42.

JRNL419 - Specialized Topics/News 419-3 Specialized Topics in News Reporting. Develops detailed reporting expertise in such topics as business, environment, education, arts and entertainment, health and medicine, sports, new media, etc. Repeatable up to three times as long as the topic changes. Prerequisite: JRNL 311 or consent of instructor. Lab fee: \$42.

JRNL426 - Online Journalism 426-3 Online Journalism. Examination of emerging forms of news delivery by computer and related convergence of print and broadcast media. Apply concepts and theories and skills in projects, and web-news content management as a real world setting for the production of professional-level cyber-clips for an online portfolio. Includes the production of news stories via email, cellular and other evolving media environments. Prerequisite: Grade of C or better in JRNL 302 or JRNL 310 and JRNL 396.

JRNL434 - Media Ethics 434-3 Media Ethics. (Same as PHIL 434) Explores the moral environment of the mass media and the ethical problems that confront media practitioners. Models of ethical decision-making and moral philosophy are introduced to encourage students to think critically about the mass media and their roles in modern society.

JRNL435 - Advanced Graphic Comm 435-3 Advanced Graphic Communication. Continues development of message design skills. Emphasizes creative solutions to the display of complex content in a wide variety of media. Prerequisite: JRNL 335 or consent of instructor. Lab fee: \$46.

JRNL436 - Multimedia Publication Design 436-3 Multimedia Publication and Design. Building upon the basic skills learned in publishing to the WWW, the course continues the exploration of using computer based technologies for presentation of information to the wide audience using the interactive capabilities of the internet and other new media. Focus is on organization of information, and the production of multimedia files in a networked environment. Includes discussion of topics including intellectual property, libel, and other matters of concern to an interactive publisher. Prerequisite: JRNL 396 with a grade of C or better. Course fee: \$42.

JRNL450 - Account Planning 450-3 Account Planning and Consumer Research. Introduces the field of account planning. Provides an understanding of how consumer research influences and informs the creative process. Learn to use qualitative research methods that are used in consumer research. Writing creative briefs that are effective and provide insights for the creative team. Prerequisite: JRNL 405.

JRNL481 - Sports Reporting 481-3 Sports Reporting. Sports reporting requires two essential ingredients: the ability to write compelling prose and a good grip on news gathering and reporting techniques. This course emphasizes both and utilizes students' interest in sports to advance their reporting skills and while preparing them for sports reporting positions in the media industry. Prerequisite: JRNL 310 or RTD 310.

JRNL488 - Sports Comm & Promotion 488-3 Sports Communication and Promotion. This course will expose students to the rapidly expanding and complex world of sports business, with an emphasis on sports communication and promotion. Topics include, but are not limited to, packaging proposals for event sponsorship, event promotion and management, effective strategies to maximize product and corporate exposure through media partnerships, and client representation.

JRNL490 - Readings 490-1 to 6 (1 to 3, 1 to 3, 1 to 3) Readings. Supervised readings on subject matter not covered in regularly scheduled courses. Limited to maximum of 3 credits per semester. Not for graduate credit. Special approval: written consent of instructor and director.

JRNL494 - Practicum 494-1 to 6 Practicum. Study, observation, and participation in publication or broadcast activities and related areas. Special approval needed from the instructor and area head. Mandatory Pass/Fail for undergraduates.

JRNL495 - Proseminar 495-1 to 12 (1 to 6, 1 to 6) Proseminar. Selected seminars investigating media problems or other subjects of topical importance to advanced journalism majors. Seminars will be offered as the need and the interest of students demand. Restricted to senior standing.

JRNL599 - Thesis 599-1 to 6 Thesis.

JRNL600 - Dissertation 600-1 to 24 (1 to 16 per semester) Dissertation.

JRNL601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

JRNL699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Journalism Faculty

Atwood, L. Erwin, Professor, Emeritus, Ph.D., University of Iowa, 1965.
Babcock, William, Professor, Ph.D., Southern Illinois University Carbondale, 1979.
Barrett, Anita J., Visiting Assistant Professor, M.F.A., Syracuse University, 1995.
Dolan, Mark, Associate Professor, M.S., Syracuse University, 1995.
Fidler, Eric, Daily Egyptian Faculty Managing Editor, M.S.J., Northwestern University, 1986.
Freivogel, William H., Professor, J.D., Washington University, 2001.
Frith, Katherine T., Emerita, Professor, Ph.D., University of Massachusetts, 1985.
Greer, Phillip, Photojournalist-in-Residence.
Gruny, C. Richard, Assistant Professor, Emeritus, J.D., University of Illinois, 1959.
Han, Dong, Assistant Professor, Ph.D., University of Illinois, Urbana-Champaign, 2011.
Jaehnig, Walter, Associate Professor, Emeritus, Ph.D., University of Essex, 1974.
Karan, Kavita, Professor and Interim Director, Ph.D., University of London, 1994.
Kingcade, Carolyn, Senior Lecturer, M.S., Southern Illinois University Edwardsville, 2006.
Kreher, Vicki, Senior Lecturer, M.B.A., Southern Illinois University Carbondale, 2013.
Lescelius, Bridget, Instructor, M.B.A., Virginia Polytechnic, 1996.
Lowry, Dennis, Professor, Emeritus, Ph.D., University of Iowa, 1972.
McClurg, Scott, Professor, Ph.D., Washington University, 2000.
Miller, Devin, Daily Egyptian Newspaper Business and Advertising Director, M.S., Southern Illinois University Carbondale, 2010.
Recktenwald, William, Senior Lecturer.
Shidler, Jon A., Associate Professor, Emeritus, M.S., Roosevelt University, 1980.
Spellman, Robert L., Jr., Associate Professor, Emeritus, J.D., Cleveland State University, 1977.
Stone, Gerald C., Professor, Emeritus, Ph.D., Syracuse University, 1975.
Veenstra, Aaron, Associate Professor, Ph.D., University of Wisconsin-Madison, 2009.
Xie, Wenjing, Associate Professor, Ph.D., University of Maryland, 2009.

Kinesiology

The Department of Kinesiology offers programs, which qualify graduates for positions as teachers in elementary, middle/junior high, and secondary schools or for alternative careers in private, industrial, and public settings. Whatever the student's career aims may be, the programs provide a full range of intriguing and challenging professional opportunities in diversified curricula. The student can choose a discipline best suited to individual interests, talents, temperament, and future plans.

While studying new concepts, the student will observe the work of outstanding teachers, athletic coaches, and clinicians. Whichever direction is selected, the student will study and practice in modern facilities, with the latest equipment and will learn the most recent techniques.

Physical Education Teacher Education Major

The physical education teacher education major consists of courses, which are designed to meet the requirements of the Illinois State Board of Education and are, in most cases, transferable to meet requirements of other states. The laboratory and classroom experiences consist of basic and applied sciences, methods of teaching, and acquisition of physical skills, which include a variety of team and individual sports, exercise, and dance. The Physical Education Teacher Education program for undergraduate majors is designed to lead to a professional educator license. All Physical Education Teacher Education majors planning on becoming licensed teachers must apply for and be admitted to the University's Teacher Education Program.

Students selecting the Physical Education Teacher Education Major are encouraged to complete a minor in coaching. This addition to the preparation for teaching will enhance a graduate's employment opportunities.

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include EDUC 211, EDUC 214, PSYC 102, KIN 201, PHSL 201, PHSL 208	39
Requirements for Major in Physical Education Teacher Education	38
KIN 113, KIN 118, KIN 216, KIN 220, KIN 300, KIN 301, KIN 305, KIN 313, KIN 314, KIN 320, KIN 321, KIN 323, KIN 345, KIN 370.	
Professional Education Requirements - EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, EDUC 401A, CI 360. ¹	27
Elective	15
Total	120

¹ *EDUC 211 and EDUC 214 are required courses that are included in the University Core Curriculum.

Physical Education Minor

A student with a minor in Physical Education in secondary education must complete the following courses:

Degree Requirements	Credit Hours
Required Activity Courses	7
KIN 113, KIN 116 or KIN 120, KIN 118	7
Required Methods Courses	5
KIN 305, KIN 323	22

Degree Requirements	Credit Hours
KIN 201, KIN 300, KIN 301, KIN 313, KIN 320 or KIN 321, KIN 324, KIN 370	19
PHSL 201	3
Total	34

Exercise Science Major

This program is designed for students who are interested in the study of Exercise Science. Preparation in this program enables the graduate to assess the components of human performance in healthy and clinical populations. Graduates are prepared for careers in public and private health and wellness programs as well as clinical programs for the rehabilitation of cardiac, cancer and pulmonary patients. Graduates have a foundation for continued study in professional programs such as physical therapy, occupational therapy, physician assistant, medicine, chiropractic and podiatry as well as graduate studies in exercise science.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
To include PSYC 102 and ZOOL 118 or ZOOL 115, HND 101, MATH 108, CHEM 140A.	1
Requirements for Major in Exercise Science	55
KIN 201, KIN 300, KIN 313, KIN 318, KIN 320, KIN 321, KIN 324, KIN 342, KIN 355F, KIN 381, KIN 382, KIN 408, KIN 420, KIN 421, KIN 428	44
Additional Requirements	11
CHEM 140B PHSL 201 PHSL 208 QUAN 402	
Electives	25
Total	120

Sport Administration Major

This major is designed for students who are interested in working in various administrative areas in the realm of sport. Students are exposed to the economic, financial, legal, ethical, managerial, sociological, and psychological aspects of sport. Job opportunities exist at the professional, intercollegiate, interscholastic, community, and youth levels within the growing sport industry.

Degree Requirements	Credit Hours
University Core Curriculum Requirements - To include KIN 201, KIN 210; PSYC 102; PHIL 104; ECON 240.	39
Requirements for Major in Sport Administration	59
KIN 313, KIN 329, KIN 345, KIN 360, KIN 364, KIN 365, KIN 366, KIN 367, KIN 416 and KIN 455	32
Additional Requirements - ACCT 210, ACCT 220; CS 200B; QUAN 402 or MGMT 208; MGMT 304; JRNL 396; MKTG 304; PSYC 323; CMST 280.	24
Electives	25
Total	120

Admission Requirements:

- Incoming freshmen must rank in the top half of their high school graduating class and have a high school GPA equal to or greater than the minimum University admission requirement.
- Students transferring from another program at SIU or students seeking admission from another institution should have a minimum overall GPA of 2.50 at the time of application. In addition, they should have completed at least 30 credit hours.

Program Requirements:

- Students must maintain a minimum overall GPA of 2.50.
- Students must earn a C or better in each of the sport administration courses that are aligned with the Sport Management Program Standards (nine courses): KIN 210, KIN 329, KIN 345, KIN 360, KIN 364, KIN 365, KIN 366, and KIN 367.

Internship Requirements (KIN 455):

- Students must have a minimum overall GPA of 2.50.
- Students must have completed a minimum of 90 credit hours and must have senior status, or they should obtain approval from the program coordinator.
- Students should have completed all sport administration courses that are aligned with the Sport Management Program Standards (nine courses): KIN 210, KIN 329, KIN 345, KIN 360, KIN 364, KIN 365, KIN 366, and KIN 367.

Students wishing to gain experience in kinesiology and areas related to kinesiology may pursue work in aquatics and coaching.

Minor in Coaching

The minor in Coaching is designed to prepare non-teacher education students to become certified via the Illinois High School Association (IHSA) to coach at an educational institution in the state of Illinois. A minor requires 17 hours of KIN coursework to include KIN 201, KIN 313, KIN 324, KIN 329, KIN 345, and KIN 355C. Students may enroll in the coaching practicum (KIN 355C) once they have met the required prerequisites, are in their last year of coursework and have met with the instructor. The KIN 355C practicum requires a minimum of 90 hours of hands-on training under a certified coach. Students are required to meet with the KIN 355C instructor of record once they declare the coaching minor.

Degree Requirements	Credit Hours
Required courses	17
<p>KIN 201, KIN 313, KIN 324, KIN 329, KIN 345, KIN 355C; KIN 201, KIN 313 & KIN 324 required before KIN 355C. KIN 329 & KIN 345 may be taken concurrently with KIN 355C. The Department of Kinesiology recommends these additional courses: KIN 320 and KIN 321</p>	

Kinesiology Courses

KIN101 - Concepts-Physical Fitness 101-2 Current Concepts of Physical Fitness. (University Core Curriculum) To foster a thorough understanding of scientific principles of physical fitness and to enhance the ability to utilize physical exercise toward achievement of healthful living. Lab fee: \$3.

KIN102A - Swimming I 102A-2 Aquatics-Swimming I: Orientation to Swimming. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Swimming suits and towels are provided; however, students may provide their own one piece swimming suit (no pockets), towels and cap (optional). Long hair must be tied back. Goggles are recommended for some classes. Prerequisite: course is open only to non-swimmers. Mandatory Pass/Fail grading. A \$4 fee is required for all classes listed.

KIN102B - Swimming II 102B-2 Aquatics-Swimming II. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Swimming suits and towels are provided; however, students may provide their own one piece swimming suit (no pockets), towels and cap (optional). Long hair must be tied back. Goggles are recommended for some classes. Prerequisite: KIN 102A or equivalent skills and safe in deep water. A \$4 fee is required for all classes listed.

KIN104A - Aerobic Dance 104A-2 Fitness-Aerobic Dance. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN104B - Cycling 104B-2 Fitness-Cycling. Bicycle required and helmet. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN104D - Strength Training 104D-2 Fitness-Strength Training. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN104E - Walking and Jogging 104E-2 Fitness-Walking and Jogging. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN104F - Weight Control 104F-2 Fitness-Weight Control. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN105A - Badminton 105A-2 Individual and Dual Activities-Badminton. Three shuttlecocks required. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN105B - Bowling 105B-2 Individual and Dual Activities-Bowling. Additional lane fee of \$39 per credit hour and bowling shoes required. These courses are designed to provide an introduction to the

fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity.

KIN105C - Golf 105C-2 Individual and Dual Activities-Golf. Six plastic golf balls required. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for sections A, D and E. A \$10 fee is required for section C.

KIN105D - Racquetball 105D-2 Individual and Dual Activities-Racquetball. Three racquetballs required. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN105E - Tennis 105E-2 Individual and Dual Activities-Tennis. Three tennis balls and racquet. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN105F - Basic Pocket Billiards 105F-2 Basic Pocket Billiards. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$10 is required for this section.

KIN106A - Basketball 106A-2 Team Activities-Basketball. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN106B - Flag Football 106B-2 Team Activities-Flag Football. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN106C - Soccer 106C-2 Team Activities-Soccer. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN106D - Softball 106D-2 Team Activities-Softball. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN106E - Volleyball 106E-2 Team Activities-Volleyball. These courses are designed to provide an introduction to the fundamental skills and knowledge in the selected activities. Students must wear clothing appropriate for the activity. A fee of \$4 is required for all classes listed.

KIN107 - Restricted Physical Education 107-1 to 4 Restricted Physical Education. For physically challenged students as recommended by Student Health Center and consent of instructor. Course not designed for students who can take other physical activity courses. Mandatory Pass/Fail.

KIN113 - Aquatics 113-2 Aquatics. This course provides the opportunity for the student to improve one's ability in swimming skills and strokes. It is designed to prepare the student to be safe in, on and around the water. It prepares the student to react in emergency situations by knowing and having the ability to perform the proper rescue techniques to use while maintaining one's own safety. Prerequisite: KIN 102A or equivalent skill. Restricted to Kinesiology Majors only.

KIN116 - Team Sports and Activities 116-3 Team Sports and Activities. This course is designed to introduce students to skills, lead up and modified games, strategies and basic rules of team sports. Emphasis will be on developing the basic skills through observation and analysis of movement patterns appropriate for various skill level. Restricted to Kinesiology Majors Only. Equipment Fee: \$4.

KIN118 - Rhythms and Dance 118-2 Rhythms and Dance. This course is designed to introduce the fundamentals of rhythm, basic dance steps and the elements of dance. Basic skills in square, folk, and social dance as well as basic rhythms and movement analysis will be covered. Lab fee: \$4.

KIN120 - Individual Sports & Activities 120-3 Individual Sports and Activities. This course is designed to introduce students to skills, lead up games, strategies and basic rules of individual sports and activities. Emphasis will be on developing the basic skills through observation and analysis of movement patterns appropriate for various skill level. Restricted to Kinesiology Majors Only. Equipment Fee: \$4.

KIN160 - Dance Concert Production 160-2 to 8 (2,2,2,2) Dance Concert Production Ensemble. A select group which choreographs, rehearses, produces, and performs one dance concert per semester and performs in other venues as feasible. Restriction: audition prior to first registration and consent of instructor each semester. 2.000 to 8.000 Credit Hours. 2.000 to 8.000 Lecture Hours.

KIN170 - Varsity Sports 170-2 Varsity Sports. The course is designed to teach skills and strategies as well as the rules and practices involved in a selected varsity sport. Prerequisite: Names must appear on an official NCAA squad list. Special approval needed from the instructor. Mandatory Pass/Fail grade.

KIN200 - History of Sport in U.S. 200-3 History of Sport in the United States. This course examines the development and significance of sport from 18th century Colonial America to the early 21st century United States. Factors such as religion, social and economic systems, urbanization, development of higher education, sport governance structures, gender, race, and ideas concerning the body are examined, and their impact upon sport is considered.

KIN201 - Movement Science 201-3 Introduction to Human Movement Science. (Advanced University Core Curriculum course) KIN 201 is a course designed to introduce students to scientific evidence related to the impact of exercise/physical activity on various physiologic systems and provide them with the knowledge necessary to promote health-related physical fitness. Students will be introduced to a variety of exercise science assessment techniques and training programs and will use the scientific method during laboratory experiments. Satisfies University Core Curriculum Human Health requirement in lieu of 101 for kinesiology majors.

KIN202 - PE for Classroom Teachers 202-3 Physical Education and Activities for Classroom Teachers. The purpose of this course is to equip classroom teachers with the knowledge and skills to plan, implement, and evaluate appropriate and effective physical education progression. This course will consist of lectures, class participation, and demonstrations of teaching/movement and peer teaching/clinical experience. Dress must permit ease of movement. Restricted to at least sophomore standing.

KIN205 - Instruct Strategies in PE 205-3 Instructional Strategies in Physical Education. An introduction to planning and teaching physical education activities. Content includes lesson planning, practice of teaching skills through micro teaching, peer teaching, and analysis of teaching. Restricted to declared Physical Education Teacher Education majors.

KIN210 - Diversity in American Sport 210-3 Diversity in American Sport. (University Core Curriculum) Explores how historical and contemporary forces have shaped opportunities and experiences of various cultural groupings in American sport. The course focuses on diversity issues related to race, ethnicity, gender, social class, sexuality and physical ability/disability. Class utilizes a variety of interactive classroom activities to explore multicultural dynamics in sport and society.

KIN216 - Teaching Team Sports 216-3 Teaching Methods, Strategies and Development of Team Sports. The purpose of this course is to introduce students to instructional methods and strategies of teaching team sports. Emphasis will be placed on skill development and analysis of movement patterns, skill progressions, practical instructional methods, lesson planning and peer teaching. Restricted to PETE majors accepted into the Teacher Education Program.

KIN220 - Teaching Individual Sports 220-3 Teaching Methods, Strategies, and Skill Development of Individual Sports. The purpose of this course is to introduce students to instructional methods and strategies of teaching individual sports. Emphasis will be placed on skill development and analysis of movement patterns, skill progressions, practical instructional methods, lesson planning, and peer teaching. Restricted to PETE majors accepted into the Teacher Education Program.

KIN230 - Youth Fitness & Training 230-3 Youth Fitness and Sport Training. An exploration and examination of the scientific foundations underpinning the field of youth fitness and sport training. The student will learn to practically apply these principles into sound and developmentally appropriate practice

in a manner that will enhance client movement ability, efficiency, and aptitude while preventing injury and maximizing performance.

KIN257 - Current Work Experience 257-1 to 5 Current Work Experience. The student receives credit for current work experiences. Credit is awarded for many practical experiences and must be related to kinesiology and in process. Prerequisite: at least C average in Kinesiology after 12 hours. Mandatory Pass/Fail.

KIN258 - Work Experience 258-1 to 5 Work Experience. The student receives credit for past work experiences. Credit is awarded for many practical experiences and must be related to kinesiology and already completed. Mandatory Pass/Fail. Prerequisite: at least C average in Kinesiology courses after 12 hours.

KIN300 - Musculoskeletal Anatomy 300-3 Musculoskeletal Anatomy. A fundamental study of the human body and its parts with special emphasis on bone, muscle and tissues. Lab fee: \$10.

KIN301 - Found/Organ/Admin of PE 301-3 Foundation, Organization and Administration of Physical Education. This course is designed to examine the historical and philosophical development of physical education. Students will gain a historical perspective of the physical education profession ranging from its earliest origins to its future development. The course will also examine the administrative and legal concerns relevant to the profession of physical education. Students will develop an understanding of the theories and principles involved in the administration and management of a physical education program. Specific concerns to be addressed are: (1) organizational and administrative processes, (2) program facilities and equipment, (3) personnel, (4) budget, (5) legal liabilities, and (6) public relations. The emphasis throughout the course will be a practical application of administrative concepts for the physical education teacher. Restricted to KIN majors only.

KIN302 - Normal/Pathologcl Kinesiology 302-2 Kinesiology of Normal and Pathological Conditions. Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical activities.

KIN303 - Kinesiology 303-2 Kinesiology. Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical education activities.

KIN304 - Mech Basis:Human Movement 304-2 Mechanical Basis of Human Movement. Applies body mechanics with application of mechanical laws and principles to performance in physical activities.

KIN305 - PE-Exceptional Children 305-2 Methods of Teaching Physical Education for Exceptional Children. An introductory course designed to provide minimal competencies needed to teach the physically challenged students in the mainstream or special education setting. The course will also aid the special education classroom teacher in providing appropriate physical education. Prerequisite: KIN 313. Restricted to PETE majors in the Teacher Education Program. Concurrent enrollment in EDUC 308 required.

KIN313 - Motor Behavior 313-3 Motor Behavior. This course will introduce the student who will teach motor skills to people of any age to basic principles and concepts involved in the performance, control, and learning of motor skills. Emphasis will be on acquainting the student with age-related characteristics affecting motor performance, processes involved in the control of movement, and structuring the learning environment to maximize long-term retention of skills. Restricted to KIN majors only.

KIN314 - Methods of Elementary PE 314-3 Methods of Teaching Elementary Physical Education. The purpose of this course is for Physical Education students to develop knowledge and skills for planning, implementing, and evaluating appropriate and effective physical education progressions. The course will consist of lectures, class participation in demonstrations of teaching movement, and peer teaching/clinical experience. Prerequisite: KIN 113, KIN 118. Restricted to PETE majors accepted in the Teacher Education Program. Concurrent enrollment in EDUC 301. Concurrent enrollment in KIN 323 not permitted. Equipment Fee: \$4.

KIN318 - Behavior Aspects of Exercise 318-3 Behavioral Aspects of Exercise. This course will explore the theory and research related to the psychological and social aspects of exercise and how exercise may impact the individual's psychosocial health and behavior. The focus is on theory and application. It

will cover theories and models of exercise behavior, psychosocial outcomes of exercise, social factors in exercise behavior, communication skills needed to help increase physical activity, policy, population, community, and individual physical activity interventions.

KIN320 - Exercise Physiology 320-3 Exercise Physiology. Immediate and long range effects of muscular activity on the systems. Integrative nature of body functions and environmental influence on human performance efficiency. Lab to be arranged. Prerequisite: KIN 201 or consent of instructor and PHSL 201. Lab fee: \$10.

KIN321 - Biomechanics Human Movement 321-3 Biomechanics of Human Movement. The science of human motion is the basis of this course. The anatomical and mechanical principles of human motion will be studied as well as how these principles relate to skillful and efficient movement in humans. Prerequisite: KIN 300 or PTH 207.

KIN322 - Teaching Practicum 322-1 Teaching Practicum. Laboratory experience assisting with a physical education courses or in a school setting. Mandatory Pass/Fail.

KIN323 - Methods of Secondary PE 323-3 Methods of Teaching Secondary Physical Education. The purpose of this course is for physical education students to develop knowledge and skills for planning, implementing, and evaluating appropriate and effective physical education programs at the secondary level. The course will consist of lectures, class participation in demonstrations of teaching physical activity and peer teaching/clinical experience. Prerequisites: KIN 113, KIN 118. Restricted to PETE majors accepted in the Teacher Education Program. Concurrent enrollment in EDUC 302. Concurrent enrollment in KIN 314 is not permitted. Equipment fee: \$4.

KIN324 - Essentials Athletic Injury Mgt 324-3 Essentials of Athletic Injury Management. This course is designed to provide basic information regarding risk management, prevention, recognition, first aid, taping, and wrapping of athletic injuries. The student will be required to successfully demonstrate basic strapping techniques, bandaging, splinting, CPR/AED & First Aid. The course will lead to certification in Adult/Child First Aid, CPR and AED. Certification fees payable to the local organization will be collected in class. Restricted to Junior/Senior standing only. Lab fee: \$15.

KIN329 - Sport Governance 329-3 Sport Governance. This course provides a comprehensive overview of the fundamental aspects of management and administration within sport organizations. Specifically, this course focuses on practical applications of governance principles to amateur (interscholastic, intercollegiate, Olympics, and NPOs) and professional sport organizations operating at national and international levels.

KIN330A - Coaching Basketball 330A-2-26 (2 per section) Techniques and Theory of Coaching-Basketball.

KIN330B - Coaching Football 330B-2-26 (2 per section) Techniques and Theory of Coaching-Football.

KIN330C - Coaching Swimming 330C-2-26 (2 per section) Techniques and Theory of Coaching-Swimming.

KIN330D - Coaching Baseball 330D-2-26 (2 per section) Techniques and Theory of Coaching-Baseball.

KIN330E - Coaching Track & Field 330E-2-26 (2 per section) Techniques and Theory of Coaching-Track and Field.

KIN330F - Coaching Wrestling 330F-2-26 (2 per section) Techniques and Theory of Coaching-Wrestling.

KIN330G - Coaching Tennis 330G-2-26 (2 per section) Techniques and Theory of Coaching-Tennis.

KIN330H - Coaching Gymnastics 330H-2-26 (2 per section) Techniques and Theory of Coaching-Gymnastics.

KIN330I - Coaching Golf 330I-2-26 (2 per section) Techniques and Theory of Coaching-Golf.

KIN330J - Coaching Badminton 330J-2-26 (2 per section) Techniques and Theory of Coaching-Badminton.

KIN330K - Coaching Field Hockey 330K-2-26 (2 per section) Techniques and Theory of Coaching-Field Hockey.

KIN330L - Coaching Softball 330L-2-26 (2 per section) Techniques and Theory of Coaching-Softball.

KIN330M - Coaching Volleyball 330M-2-26 (2 per section) Techniques and Theory of Coaching-Volleyball.

KIN342 - Pharmacology for Sport/AH Prof 342-3 Pharmacology for Sport and Allied Health Professionals. This course is designed to make the allied health and exercise professional aware of the effects of prescription, non-prescription, performance enhancing and street drugs on the performance of physically active persons. Prerequisite: PHSL 201, CHEM 140A or 200/201.

KIN345 - Psych Social Aspects Sport 345-3 Psychological and Social Aspects of Sport and Physical Activity. This course exposes students to psychological and sociological concepts related to sport and physical education contexts. Primarily designed for future physical education teachers and coaches, the class examines how psychological and sociological principles relate to teaching and coaching contexts. Restricted to KIN majors only.

KIN350A - Special Topics-Kinesiology 350A-1-3 Special Topics-Kinesiology. The class will focus on various topics depending on the needs and interests of students and the expertise of faculty. 1 to 3 credit hours; may be repeated three times for a max of 9 hours. Special approval needed from the instructor.

KIN350B - Special Topics-Exercise Sci 350B-1-3 Special Topics-Exercise Science. The class will focus on various topics depending on the needs and interests of students and the expertise of faculty. 1 to 3 credit hours; may be repeated three times for a max of 9 hours. Special approval needed from the instructor.

KIN350C - Special Topics-Athletic Train 350C-1-3 Special Topics-Athletic Training. The class will focus on various topics depending on the needs and interests of students and the expertise of faculty. 1 to 3 credit hours; may be repeated three times for a max of 9 hours. Special approval needed from the instructor.

KIN350D - Special Topics-PE Teacher Educ 350D-1-3 Special Topics-Physical Education Teacher Education. The class will focus on various topics depending on the needs and interests of students and the expertise of faculty. 1 to 3 credit hours; may be repeated three times for a max of 9 hours. Special approval needed from the instructor.

KIN350E - Special Topics-Sport Adm/Coach 350E-1-3 Special Topics-Sport Administration/Coaching. The class will focus on various topics depending on the needs and interests of students and the expertise of faculty. 1 to 3 credit hours; may be repeated three times for a max of 9 hours. Special approval needed from the instructor.

KIN355A - Practicum in Aquatics 355A-2 to 14 (2 per section) Practicum-Aquatics. Restricted to written consent of instructor.

KIN355B - Practicum: Special Pops 355B-2 to 14 (2 per section) Practicum-Special populations. Restricted to written consent of instructor.

KIN355C - Practicum in Coaching 355C-2 to 14 (2 per section) Practicum-Coaching. The 355C practicum requires a minimum of 90 hours of hands-on training under a certified coach. See Coaching minor description for other details. Mandatory Pass/Fail. Restricted to written consent of instructor. Prerequisites: KIN 201, 313, 324, 329, 345. Co-requisite course (concurrent enrollment allowed): KIN 329, 345.

KIN355E - Practicum in Dance 355E-2 to 14 (2 per section) Practicum-Dance. Restricted to written consent of instructor.

KIN355F - Practicum:Exercise Science 355F-2 to 14 (2 per section) Practicum-Exercise Science. Restricted to written consent of instructor. Fee: \$20.

KIN355G - Practicum:Teaching Sports 355G-2 to 14 (2 per section) Practicum-Teaching of Sport. Restricted to written consent of instructor.

KIN360 - Intro Sport Administration 360-3 Introduction to Sport Administration. The course will provide students with the foundations and principles of sport administration, including an overview of the structure of the sport industry and basic fundamental knowledge and skills necessary for the successful sport administrator. The course will address essential topics in sport administration, the history of sport administration, management and marketing principles, amateur and professional sport industry & career preparation.

KIN364 - Legal & Ethical Issues in Sport 364-3 Legal & Ethical Issues in Sport. This course provides an extensive overview of legal principles and ethical issues in sport. This course will begin with an introduction to the different fields of law & a survey of the broad issues related to sport law (federal amendment, torts, contracts, labor relations). The second half of this course examines the basic philosophical issues concerning ethics and moral reasoning and how these issues relate to sport.

KIN365 - Business Aspects of Sport 365-3 Business Aspects of Sport. The course will provide students with basic knowledge and understanding of the principles, processes, and strategies related to financing, marketing and managing sport resources. The focus will be on applications of the principles and concepts of sport finance and marketing, and event management to the sport industry. The course will address a variety of current topics associated with the sport industry.

KIN366 - Sport Promotion Mgmt 366-3 Sport Promotion Management. This course provides an introduction to promotions and communications within the sport industry. This course is designed to help students achieve a basic understanding of the principles, processes, and strategies pertaining to sport promotions and communications. Emphasis shall be placed on the application of promotional principles to the sport industry. This course addresses topics important to sport organizations, including sport consumers and their decisions, sport segmentation, the 4-Ps (Product, Price, Place, and Promotion), the role of sport media, media relations in sport, and sport public relations.

KIN367 - Sport Venue/Event Mgmt 367-3 Sport Venue and Event Management. This course provides students with the essentials of planning, funding, and managing facilities and events within the sport industry. This course will focus on specific strategies for organizing and executing sporting events. Topics include meeting the challenges of managing sport facilities, issues involved with crowd & alcohol management, risk management, event planning, event logistics, budget development, sponsorship proposals, negotiations and contracts, working with customers and athletes, and event promotion plans.

KIN370 - Assessment in PE 370-3 Measurement, Evaluation, and Assessment in Physical Education. The purpose of this course is to introduce students to the theory and practical application of measurement, evaluation, and assessment in physical education. The course will provide an overview of multiple assessments of student learning within the psycho-motor, cognitive, and affective domains covering basic statistical techniques and interpretation and application of performance results. Restricted to PETE majors accepted in the Teacher Education Program. Concurrent enrollment in EDUC 303.

KIN380 - Aerobics 380-2 Aerobics. A study of theoretical and practical framework within which the concepts of aerobic fitness exist. Both an evaluation and a hands-on experience with the direct and indirect procedures commonly used to determine oxygen uptake capacity and aerobic power. A thorough discussion of the meaning of aerobic fitness as it applies to general fitness of the adult and aging person. Prerequisite: KIN 320. Restricted to junior standing. Special approval needed from the instructor in the semester prior to enrollment.

KIN381 - Exercise & Nutrition 381-3 Exercise and Nutrition. This course develops the interrelationship of exercise and nutrition. The course begins with an overview of food nutrients and bioenergetics. It then examines optimal nutrition for physical activity, nutritional ergogenic aids, and weight control and disordered eating. Prerequisite: KIN 320. Restricted to junior standing.

KIN382 - Cardiovascular Test/Exercise 382-3 Graded Cardiovascular Testing and Exercise Prescription. A study of the controlled use of exercise to evaluate the cardiovascular function of an adult

population and in specific persons of middle and older aged groups. The scientific basis of recommending exercise programs as a preventive rather than a treatment of heart disease will be stressed. Prerequisite: KIN 320. Restricted to junior standing.

KIN400 - Psychology of Injury 400-3 Psychology of Injury. This course will explore the theory and research related to the psychological aspects of injury and injury rehabilitation. The focus is on theory and application. Case studies will be used to explore assessment and intervention approaches relevant for different levels of athletic training, sports medicine and sport psychology professionals.

KIN402 - Exer Prog Cancer Survivors 402-2 Exercise Programming for Cancer Survivors and Caregivers (Strong Survivors Staff Training). The primary goal of this course is to give both graduate and undergraduate students the necessary tools to successfully prescribe and administer safe and effective exercise programs and assessments for cancer survivors and caregivers as a staff member for the Strong Survivors Exercise and Nutrition Program for Cancer Survivors and Caregivers. The course will also give students a baseline of knowledge that will help prepare them to sit for cancer exercise trainer certification exams. Special approval needed from the instructor.

KIN408 - Advanced Exercise Prescription 408-3 Advanced Exercise Prescription. Advanced exercise prescription provides an analysis of physical fitness as it relates to the total well-being of the individual. The course contains specific units on fitness parameters, hypokinetic disease, stress, current levels of physical fitness, but emphasizes the creation of training programs. The course contains exercise prescription for healthy, at risk, overweight and chronically ill populations. Prerequisite: KIN 382 and KIN 320.

KIN416 - Team Building 416-3 Introduction to Team Building. The purpose of this course is to acquaint students, teachers, coaches and administrators with the "team building model". The course will focus on icebreakers, trust and communication initiatives, problem solving skills and processing. The goal of this introductory course is for the participants to become familiar and acquire team building skills, to develop a workable team building model and initiate the plan in the classroom or workplace.

KIN420 - Advanced Exercise Physiology 420-3 Advanced Exercise Physiology. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Prerequisite: PHSL 201 and KIN 320.

KIN421 - Principles Skel Muscle Action 421-3 Principles of Skeletal Muscle Action. The neural, physiological and mechanical basis of skeletal muscle action and plasticity in relation to the expression of strength and power. Prerequisite: PHSL 201 and KIN 320.

KIN428 - Phys Act/Exercise-Older Adults 428-3 Physical Activity and Exercise for Older Adults. (Same as GRON 428) This course is designed to introduce the student to physical changes of the older person with reference to activity and exercise and to teach the student about rational activity and exercise programs for the older person with consideration of the care and prevention of typical injuries that may occur with such programs.

KIN455 - Internship in Sports Admin 455-1 to 12 Internship in Sports Administration. The internship is a culminating experience directly related to the student's intended employment or area of interest. To enroll students must be of senior status (at least 90 credit hours completed) and have a 2.5 g.p.a or have approval from the instructor. Prerequisites include KIN 301, KIN 329, KIN 345, KIN 360, KIN 364, and KIN 365. All conditions of placement, conduct and evaluation of the internship will be under jurisdiction of the appropriate faculty.

KIN493A - Individual Research: Dance 493A-2 to 4 Individual Research-Dance. The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor.

KIN493B - Individual Research: Kinesiology 493B-2 to 4 Individual Research-Kinesiology. The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor.

KIN493C - Individual Research: Measurement 493C-2 to 4 Individual Research-Measurement. The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor.

KIN493D - Individual Research: Motor Development 493D-2 to 4 Individual Research-Motor Development. The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor.

KIN493E - Individual Research: Physiology of Exercise 493E-2 to 4 Individual Research-Physiology of Exercise. The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor.

KIN493F - Individual Research: History & Philosophy 493F-2 to 4 Individual Research-History and Philosophy. The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor.

KIN493G - Individual Research: Motor Learning 493G-2 to 4 Individual Research-Motor Learning. The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor.

KIN493H - Individual Research: Psycho/Social Aspects 493H-2 to 4 Individual Research-Psycho-social Aspects. The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor.

KIN493I - Individual Research: Sport Management 493I-2 to 4 Individual Research-Sport Management. The selection, investigation, and writing of a research topic under supervision of an instructor. Written report required. Special approval needed from the instructor.

KIN494A - Practicum in Kinesiology 494A-1 Practicum in Kinesiology. Supervised practical experience at the appropriate level in selected kinesiology activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning kinesiology facilities. Special approval needed from the instructor.

KIN494B - Practicum in Kinesiology 494B-1 Practicum in Kinesiology. Supervised practical experience at the appropriate level in selected kinesiology activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning kinesiology facilities. Special approval needed from the instructor.

KIN500 - Techniques of Research 500-3 Techniques of Research. Study of research methods and critical analysis of research literature specifically applied to the areas of sport exercise and motor performance. Special approval needed from the instructor.

KIN501 - Foundations Sport/Fitness Mgmt 501-3 Foundations of Sport and Fitness Management. An introduction to broad concepts and issues regarding the management of health clubs, corporate fitness programs; and various components of amateur and professional sport organizations. Students will investigate foundational aspects of sport and fitness management, examine requirements for operating successful programs, and gain insight into various career opportunities.

KIN502 - Interview Research 502-3 Methods of Interview Research. This course will familiarize students with the theory and techniques of interview research and demonstrate the application of this research method to practice. Students will engage in a group interview project focusing on a selected issue and an individual project utilizing interview research in their specialty area. No prerequisites required.

KIN503 - Seminar in Kinesiology 503-2 Seminar in Kinesiology. Making a systematic analysis of problems and issues encountered in the conduct of kinesiology. Selection of a problem or issue that is a concern to Kinesiology and suggestion of solutions.

KIN504 - Psychological Aspects of Sport 504-3 Psychological Aspects of Sport. This course presents the theoretical and empirical foundations of sport psychology. Operating from a conceptual rather than an applied framework, this class develops an understanding of social psychological phenomena and

processes related to participation in sport and physical activity (e.g., personality, anxiety, arousal, achievement motivation, social facilitation, aggression, pro-social behavior, group dynamics).

KIN505 - Topical Seminar Kinesiology 505-3 to 12 (3 per topic) Topical Seminar in Kinesiology. Students may concentrate on different topics each semester dependent upon both the interests of the students and the expertise of the graduate faculty. Special approval needed from the instructor.

KIN506 - Medical Aspects of Exercise 506-3 Medical Aspects of Exercise. This course is a presentation/discussion style course in which students will examine and discuss the principles of exercise testing and prescription for individuals from a wide variety of disease/disability backgrounds. Discussion will include issues of caution/contradiction for various forms of exercise, the role of exercise as a therapeutic modality and exercise as a means of preventive medicine. Prerequisite: KIN 420.

KIN507 - Organizational Behav in Sport 507-3 Organizational Behavior in Sport. This course provides students with an examination of fundamental theories and practices related to behavior of individual and groups in sport organizations. The focus will be on the practical application of the theories to the actions of sport and physical activity managers. Special emphasis will be on: ethics in organizations, leadership, managerial decision making, motivation, organizational commitment, and managing a diverse work force.

KIN508 - Administration of Athletics 508-3 Administration of Athletics. Designed to present a broad view of the role, structure and governance of interscholastic and intercollegiate athletics programs. This course will enable students to develop and comprehend current knowledge, theories and practices in athletic management which operate within a framework of state and national governance policies and rules.

KIN510 - Motor Development 510-3 Motor Development. In-depth study of the development of gross motor skills from infancy through adolescence, the biological and environmental variables that affect motor development, and individual differences in attaining motor proficiency. In addition, selected current issues in motor development will be examined. No prerequisite.

KIN511 - Biomech Analysis Hum Mov 511-3 Biomechanical Analysis of Human Movement. Biomechanical concepts will be reviewed, as well as discussion concerning tissue mechanics, and the integration of the neural control of movement. Importance will be placed on application of mechanical principles when analyzing basic human movements. Includes completion of a topical research paper. Prerequisite: KIN 321 or equivalent.

KIN512 - Biomechanic:Human Motion 512-3 Biomechanics of Human Motion. Methods of data collecting and analyzing the biomechanics of human motion under normal and pathological conditions are covered. Students complete a biomechanical study for a one segment motion.

KIN513 - Social Aspects of Sport 513-3 Social Aspects of Sport and Physical Activity. This course presents the theoretical and empirical foundations of sport sociology. It is a survey course designed to introduce you to a variety of topics concerned with sociological aspects of sport and physical activity. A research-based approach is used to explore the relationship of sport to various social institutions, as well as the role of social processes in sport and physical activity contexts.

KIN514 - Res/Practice Appl Sport Psyc 514-3 Research and Practice in Applied Sport Psychology. This course examines current research and practice in applied sport psychology. Emphasis will be placed on moving from theory into practice on sport-specific individual differences, motivational approaches, and interventions.

KIN515 - Body Composition & Performance 515-3 Body Composition and Human Physical Performance. Physical dimensions of the human body as they influence motor performance and are modified by protracted physical exercise. Prerequisite: KIN 420 or equivalent.

KIN517 - Athletic Facility Design 517-3 Athletic and Kinesiology Facilities Design, Construction, and Maintenance. This course examines the principles and states of planning to manage an Athletic and Kinesiology facility. Basic principles of design, construction, maintenance and how to manage facilities based upon program characteristics.

KIN520 - Metabolic Analys: Hum Activity 520-3 Metabolic Analysis of Human Activity. Metabolic principles pertinent to human physical performance with emphasis on sport, exercise and occupational

activity analysis. A detailed study of oxygen utilization, oxygen debt, mechanisms of oxygen transport as they relate to physiological homeostasis in localized and total body motor activity. Emphasis on the laboratory study of aerobic and anaerobic performance. Prerequisite: KIN 420 or equivalent.

KIN525 - Motor Learning 525-3 Motor Learning-Theories of Research. This course will provide a theory and research foundation for understanding motor skill acquisition and factors that influence the learning of motor skills. This foundation is important to develop research that will increase understanding of motor skill learning, and to design effective practice conditions that enhance learning. Various topics related to the cognitive and motor processes influencing motor skill learning will be discussed.

KIN530 - Exercise Psychology 530-3 Exercise Psychology. This course explores the theory and research related to the psychological and social aspects of exercise and how exercise may impact the individual's psychological health and behavior. The focus is on theory and application. It covers theories and models of exercise behavior, psychosocial outcomes of exercise, social factors in exercise behavior, and physical activity interventions.

KIN540 - Sport Promotions 540-3 Sport Promotions. This course provides the theoretical foundation of promotions specific to the sport industry. It will include professional applications to profit and non-profit sport organizations.

KIN550 - Legl Asp Spt Phys Act 550-3 Legal Aspects of Sport and Physical Activity. A course designed to acquaint student with legal research and the role that law plays in governing the kinesiology, sport and fitness industries. The student will actively research various theories of law and how they affect the nature of kinesiology, sport fitness activity, the participants and consumers. An additional focus will be on specific situations that give rise to injury and subsequent law suits.

KIN555 - Internship:Sport Mgmt 555-1 to 6 Internship in Sport Management. The internship is a culminating experience directly related to the student's intended employment or area of interest. It will, therefore, normally be taken after the predominance of course work is completed. The internship may be completed in any appropriate setting as judged by the faculty associated with the area of sport management. All conditions of placement, conduct and evaluation of the internship will be under the jurisdiction of the appropriate faculty. Graded S/U only. Special approval needed from the instructor.

KIN560 - Gender and Sport 560-3 Gender and Sport: Sociological and Psychological Perspectives. (Same as WGSS 560) This course explores psychological and sociological dimensions underlying the concept of gender and critically examines how gender relates to sport and physical activity. Students will be introduced to non-traditional as well as traditional research that addresses the issue of gender in various physical activity contexts.

KIN580 - Financial Aspects of Sport 580-3 Financial Aspects of Sport. The primary goal of this course is to provide students with a basic knowledge and understanding of the principles, processes, and strategies related to the financial aspects of sport organizations, which consist of professional sport franchises, college athletic departments, community recreation programs, etc. The focus will be on the many conventional and innovative revenue acquisition methods applicable to sport oriented organizations. In addition to the basic accounting concepts and budgeting techniques, this course will address current topics in the field of sport financing, including: tax support, municipal and corporate bonds, economic impact analysis, fundraising, licensing, ticket sales, concessions, and corporate sponsorships.

KIN590 - Readings in Kinesiology 590-1 to 4 Readings in Kinesiology. Supervised readings in selected subjects. Special approval needed from the instructor.

KIN592 - Research in Kinesiology 592-2 to 8 Research in Kinesiology. Plan, conduct, and report assigned research studies. Masters students may take up to three credit hours. Doctoral students must enroll for a minimum of six credit hours. Graded S/U only. Prerequisite: KIN 500 or equivalent. Special approval needed from the instructor.

KIN594 - Professional Developmnt Project 594-3 Professional Development Project. Supervised independent work leading to the production of a professional development project that can be utilized in the student's professional career. The exact nature of the project is to be determined by the student and the respective graduate advisor. An additional graduate faculty member in the student's area of study also

must approve the project before the student begins work. Graded S/U only. Special approval needed from the instructor.

KIN599 - Thesis 599-1 to 6 Thesis. Graded S/U. Prerequisite: KIN 500 or equivalent.

KIN601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

KIN699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Kinesiology Faculty

Ackerman, Kenneth, Assistant Professor, Emeritus, M.A., Michigan State University, 1959.
Ambati, Venkata Naga Pradeep, Assistant Professor, Ph.D., University of Texas at El Paso, 2014.
Anton, Phillip M., Associate Professor, Ph.D., University of Northern Colorado-Greeley, 2006.
Becque, M. Daniel, Associate Professor, Ph.D., University of Michigan, 1988.
Blackman, Claudia J., Assistant Professor, Emerita, M.S.Ed., Southern Illinois University, 1968.
Blinde, Elaine M., Professor, Emerita, Ph.D., University of Illinois, 1987.
Brechtelsbauer, Kay M., Assistant Professor, Emerita, Ph.D., Southern Illinois University, 1980.
Good, Larry, Associate Professor, Emeritus, Ph.D., Temple University, 1968.
Illner, Julee Ann, Assistant Professor, Emerita, M.S.Ed., Southern Illinois University, 1968.
Knapp, Bobbi, Associate Professor, Ph.D., University of Iowa, 2008.
Knowlton, Ronald, Professor, Emeritus, Ph.D., University of Illinois, 1961.
Olson, Michael, Associate Professor, Ph.D., Louisiana State University, 2006.
Park, Meungguk, Associate Professor, Ph.D., The Ohio State University, 2005.
Partridge, Julie, Associate Professor, Ph.D., University of Northern Colorado-Greeley, 2003.
Porter, Jared, Associate Professor, Ph.D., Louisiana State University, 2008.
Vogler, E. William, Professor, Emeritus, Ed.D., University of Utah, 1980.
Wallace, Julianne, Associate Professor and Chair, Ph.D., Iowa State University, 2004.
West, Charlotte, Professor, Emerita, Ph.D., University of Wisconsin, 1969.
Wilson, Donna, Associate Professor, Emerita, M.F.A., University of Oklahoma, 1975.
Yoh, Taeho, Professor, Ph.D., Florida State University, 2001.

Liberal Arts

Liberal Arts Courses

LAC100 - Strategies for Acad Success 100-1 Strategies for Academic Success. Intended for liberal arts students on academic probation, this course is designed to assist students in their re-entry to college. Topics will cover academic, personal and career issues as well as various resources available for students on campus. Course is restricted to College of Liberal Arts students. Special approval needed from the instructor.

LAC250 - Arts in University Life 250-3 Fine and Performing Arts in University Life. This course links participation in university and community fine and performing arts activities to learning in the liberal arts. Students are required to attend six events and write six papers. Mandatory Pass/Fail.

LAC260 - Humanities in University Life 260-3 Humanities in University Life. This course links participation in university and community humanities lectures and presentations to learning in the liberal arts. Students are required to attend six events and write six papers. Mandatory Pass/Fail.

LAC270 - Diversity in University Life 270-3 Diversity in University Life. This course links participation in university and community multicultural events, lectures, and presentations to learning in the liberal arts. Students are required to attend six events and write six papers. Mandatory Pass/Fail.

LAC280 - Social Sciences in Univ Life 280-3 Social Sciences in University Life. This course links participation in university and community social science lectures and presentations to learning in the liberal arts. Students are required to attend six events and write six papers. Mandatory Pass/Fail.

LAC288 - Study Abroad Orientation 288-1 Study Abroad Orientation. A pre-departure orientation course designed to prepare study abroad/exchange students for maximum learning during their overseas experience. Topics will include logistics, intercultural communication skills, health and safety issues, educational systems abroad and re-entry. Enrollment is restricted to consent of Study Abroad Programs.

LAC300I - Social Perspectives 300I-3 Social Perspectives on Environmental Issues. (Same as AGRI/ABE 300I) (University Core Curriculum) Case studies (e.g., rural village in developing nation; small town in the U.S.; city in developing nation) are used to learn how different societies and groups deal with their specific environmental issues, and how culture and economic factors affect their perspectives and actions.

LAC301 - Professional Development 301-2 Professional Development. This course is designed to prepare liberal arts students for the transition from the academic community into the workforce. Students will develop a personal career development strategy, learn how to conduct a job search in their chosen career field, and acquire professional development skills needed to succeed in various work environments. Mandatory Pass/Fail.

LAC303 - Interdisciplinary Studies 303-1 to 9 (1 to 3 per semester) Interdisciplinary Studies. Offered in a variety of forms, including lectures, readings, research, or field study. Initiated by at least two faculty members from different departments. Approval by the dean is required during the semester prior to its offering. May be repeated to equal a total of nine credits.

LAC388 - Study Abroad 388-1 to 45 Study Abroad. Provides credit toward the undergraduate degree for study at accredited foreign institutions or approved overseas programs. Final determination of credit is made on the student's completion of the work. One to eighteen hours per semester, one to nine hours for summer, maximum of 45. Requires special approval by Study Abroad Programs. Course may be pass/fail at the discretion of the academic unit.

Languages, Cultures, and International Studies

Learning another language will enrich your life and expand your opportunities. Develop a high level of fluency in a specific language and culture by specializing in one of our [language and culture](#) areas [Classics](#), [East Asian Languages & Culture](#), [French](#), [German](#), or [Spanish](#). For international business, try our [Foreign Language & International Trade](#) program, and complement your language study with courses in economics and business and an internship abroad. Or combine your language study with classes on global and regional issues in our [International Studies](#) program.

LANGUAGE AND CULTURE SPECIALIZATIONS

These specializations provide a humanistic education that deepens students' knowledge of their chosen language and culture. Students may specialize in:

- Classics
- East Asian Language and Culture
- Foreign Language and International Trade
- French, German, or Spanish
- International Studies

Teacher Education Program. French, German, or Spanish students may choose to enter the Teacher Education Program and pursue a license to teach in Illinois. They may secure a K-12 teaching license in French, German, or Spanish while earning either a B.A. in the College of Liberal Arts or a B.S. in the College of Education and Human Services.

We also offer language and culture minors in the following areas:

- American Sign Language
- Chinese
- Classical Civilization
- East Asian Civilization
- French
- German
- Greek (Ancient)
- Japanese
- Latin
- Spanish

Foreign Language And International Trade Specialization (FLIT)

Degree Requirements	Credit Hours
MUS 140 A-X, MUS 440 A-Y, principal field, 8 semesters	21
MUS 011, MUS 366 A-F	8
MUS 498	2
MUS 461	3
MUS 324 and MUS 326	2
MUS 407; MUS 421 or any of MUS 470, MUS 471, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B	6
MUS 365 A-J	3
Approved music electives ¹	3
Total	48

¹ Music Elective must be at the 300/400 level.

International Studies Specializations

Students in this area earn the major in Languages, Cultures, and International Studies (LCIS) with one of the following specializations:

- African and Middle Eastern Studies
- Asian and South Pacific Studies
- European Studies
- Latin American and Caribbean Studies

In addition to coursework in their region, students study global and comparative issues and gain fluency in a language relevant to their chosen region. We also offer a minor in International Studies.

Departmental Procedures

Advising, Assessment, and Graduation

All department majors must meet with the relevant area advisor before registering for classes. No course with a grade below C can be counted toward fulfillment of any departmental major or minor.

The department strongly recommends study abroad. Students interested in studying abroad should speak with their departmental advisor to ensure they will be able to transfer credit upon their return to SIUC.

Students in the Foreign Language and International Trade specialization must pass oral and written proficiency exams before doing internships, and students preparing for teacher education must pass oral and written proficiency exams before student teaching is begun. During the course of their study, department majors may be asked to gather materials for assessment portfolios and to ensure oral assessments are completed in a timely manner. Majors should check with the relevant advisor to confirm that they are completing all required assessment work. Failure to submit all materials in a timely manner may result in a delay in graduation.

Program Flexibility and Interdisciplinary Work

The department's flexible programs are designed to encourage interdisciplinary work. Numerous courses required for our specializations also meet Core Curriculum or College of Liberal Arts requirements; details are spelled out below. Students in our language and culture specializations can readily accommodate a second major, if they so choose. Our International Studies and Foreign Language and International Trade programs incorporate coursework from other departments by design and are thus interdisciplinary by their very nature.

Writing Intensive Courses

In pursuit of proficiency in writing, and in keeping with the College of Liberal Arts Writing Across the Curriculum requirement, most departmental programs require an upper-level writing intensive class, as outlined below. Such courses will require students to write a minimum of 3500 words (counting revisions) in the target language, at least half of which must be in formal writing, such as reports, critical analyses, and research papers.

Departmental Minors

Students wishing to complete a minor must apply for approval of their program of study with the department; without this approval the minor will not be officially listed on the student's transcript at the time of graduation. Interested students should contact the department office for details. Minors in modern foreign languages (Chinese, French, German, Japanese, Spanish) must complete at least one regularly scheduled 300 or 400 level language course at Southern Illinois University Carbondale. See the individual area listings below for specific requirements.

Placement Policy

Students with expertise in a language should take a placement test to help them sign up for the proper class. A free online placement test is available for French, German, or Spanish; students interested in other languages offered by the department should contact the department office for guidance on placement. Students who have successfully completed one year of language study in high school should normally start at the second semester level at SIUC; students who have completed two years should normally start at the third semester. Those with three or more years in high school should contact the department office for guidance. For details please see the departmental webpage (languages.siu.edu).

Proficiency Credit Policy

Unit credit (without grade) on the basis of proficiency may be obtained in American Sign Language, Chinese, French, German, Greek, Japanese, Latin, and Spanish. This may be accomplished by taking a validating course or by examination. Credit through examination may be given for first and second year basic skills courses only.

Credit by Examination: Credit through examination may be given for first and second year basic skills courses. Students who desire credit must not have earned college credit in the language they wish to proficiency. See *Proficiency Examinations and CLEP* in Chapter Two of this catalog for University guidelines. CLEP examinations in French, German, or Spanish are offered by the SIU Testing Services Office; credit is given by the year. The department offers proficiency credit by the semester (up to four semesters worth) in American Sign Language, Chinese, Japanese, Greek, and Latin. Proficiency credit may also be available for languages not taught by the department. Contact the department office for details on the exams, or to arrange an examination. There is a \$100 fee for taking a departmental proficiency exam.

Credit by Validating Course: Basic language skills courses taken at SIUC, up to and including 320B, may serve as validating courses. Upon receiving a grade of A or B in a validating course, students who file the appropriate paperwork with the department will be granted validating credit for up to two of the immediately preceding basic skills courses. Contact the department for specific list of courses.

Language And Culture

Classics

Classics is the study of Ancient Greece and Rome, civilizations which have had a deep impact on our world. Classics is a strongly interdisciplinary field, and Classics students will study the language, literature, culture, history, and material remains of these civilizations in courses taught by Classics faculty and a range of cooperating faculty from other departments. Classics students receive a liberal arts education which gives them the analytical tools to pursue a wide range of careers. Our program is flexible, allowing students to pursue their own interests within Classics and, should they so wish, a second major or degree in another field. Our interdisciplinary program requires only two years of language study, but we strongly advise students interested in pursuing graduate study in Classics or a related field to take as much Greek and Latin as they can.

Bachelors in Languages, Cultures, and International Studies, Specialization in Classics Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39

All students specializing in Classics will also receive three hours in humanities Core credit for their first semester

Degree Requirements	Credit Hours
in these languages. See chapter three for details on University Core Curriculum requirements.	
College of Liberal Arts Requirements	12
Students specializing in Classics will meet the College of Liberal Arts language requirement via their language study (six credit hours), and will require only the six hours in international coursework required by the College. See Chapter 4 for details on College of Liberal Arts requirements.	
Classics courses and courses from related disciplines	
Transfer students must complete a minimum of 12 hours of their coursework at SIUC.	
Classics Cultural Competencies:	
A) Myth: One of the following: CLAS 230, ENGL 445, THEA 354A	3
B) Greek: One of the following: CLAS 270, CLAS 310, HIST 311, PHIL 304, PHIL 470A, PHIL 470B ¹	3
C) Roman: One of the following: CLAS 271, CLAS 310, HIST 311, HIST 412A, HIST 412B, HIST 413, PHIL 469 ²	3
Classics Language Competency: Two years of Greek or Latin	3
Classics specialists need to complete two years (twelve credit hours) in Latin or Greek, but of these twelve hours six are counted above toward the College of Liberal Arts language requirement and three are counted toward Core Curriculum humanities credit, leaving only three additional hours to list here.	
Classics Electives: Courses at the 300 or 400 level approved by advisor	9
Classics Capstone: Capstone seminar (CLAS 491). We strongly recommend that students fulfill most of other Classics requirements before taking CLAS 491.	3
General Electives	43
Depending on their choices of Classics Cultural Competency courses and their Core Curriculum courses, students may need up to 30 additional hours in 300 and 400 level coursework to complete the 42 hour senior institution requirement.	
Total	120

1 CLAS 310 may count for Greek or Roman culture, but not both, unless taken twice; HIST 311 may count for Greek or Roman culture, but not both.

2 CLAS 310 may count for Greek or Roman culture, but not both, unless taken twice; HIST 311 may count for Greek or Roman culture, but not both.

Classical Civilization Minor

A minor in Classical Civilization requires 18 credit hours in Classics courses (CLAS) or related courses approved by the Classics advisor. These courses must include cultural competency courses in Myth, Greek culture, and Roman culture. The capstone seminar (CLAS 491) is also required. At least nine of these hours must be completed at Southern Illinois University Carbondale.

Greek Minor

The Greek minor requires 18 credit hours. Students will complete two years of Greek, three hours of coursework in Greek culture, and CLAS 491 (Classics capstone seminar). Students in the College of Liberal Arts can count the first six hours of the minor toward the College language requirement. At least nine of the hours counted toward the minor must be completed at Southern Illinois University Carbondale.

Degree Requirements	Credit Hours
Linguistic Competency:	
Two years of Greek	12
Cultural Competency:	
One of the following: CLAS 270, CLAS 310, HIST 311, PHIL 304, PHIL 470A, PHIL 470B, POLS 304	3
Capstone Seminar CLAS 491	3
We strongly recommend that students fulfill most other Classics requirements before taking CLAS 491.	

Latin Minor

The Latin minor requires 18 credit hours. Students will complete two years of Latin, three hours of coursework in Roman culture, and CLAS 491 (Classics capstone seminar). Students in the College of Liberal Arts can count the first six hours of the Undergraduate Curricula and Faculty Language and Culture /321 minor toward the College language requirement. At least nine of the hours counted toward the minor must be completed at Southern Illinois University Carbondale.

Degree Requirements	Credit Hours
Linguistic Competency	
Two years of Latin	12
Cultural Competency	

Degree Requirements	Credit Hours
One of the following: CLAS 271, CLAS 310, HIST 311, HIST 412A, HIST 412B, HIST 413, PHIL 469	3
Capstone seminar CLAS 491	3
We strongly recommend that students fulfill most other Classics requirements before taking CLAS 491.	

East Asian Language and Culture

China and Japan have rich, ancient cultures and also play an increasingly vital role in today's world. Students pursuing the interdisciplinary East Asian Language and Culture Specialization will acquire proficiency in Chinese or Japanese, and take courses in the department and other departments on campus that introduce them to the culture of these countries. They will gain a basic knowledge of the history, culture, and literature of people who speak their chosen language, and will learn how to think critically across cultures through analysis of beliefs, media, customs, and artifacts. In the course of their language study, they will gain the ability to discuss how and why Chinese or Japanese differ from English, helping them to understand how language works in general and how English and Chinese or Japanese work in particular. Students in East Asian studies enjoy a wide range of career options in the public and private sectors, in the US or abroad. The East Asian Specialization is flexible enough to allow students to study a second field as well, widening their intellectual and career horizons still further.

Bachelor's in Languages, Cultures, and International Studies, Specialization in East Asian Language and Culture

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Students specializing in East Asian Language and Culture will receive three credit hours of Core humanities credit for a third semester or higher in Chinese or Japanese. See chapter three for details on Core Curriculum requirements.	
College of Liberal Arts Requirements	12
East Asian specialization students will meet the six credit-hour College language requirement during the course of their language study. See chapter four for details on College of Liberal Arts requirements.	
East Asian Requirements	
Transfer students must complete a minimum of 12 hours of their coursework at SIUC, including at least one 300- or 400-level class in their chosen language.	
Three years of Chinese or Japanese (through 320B)	9

Degree Requirements	Credit Hours
East Asian specialists starting their language study at SIUC will need to complete three years (18 credit hours) in Chinese or Japanese to reach and complete 320B, but of these 18 hours six are counted above toward the College of Liberal Arts language requirement and three are counted toward Core Curriculum humanities credit, leaving only nine additional hours to list here. Students with prior experience in the language should begin at the appropriate higher level, and will require fewer total hours in language study. They will also receive up to six hours of validating credit by successfully completing an intermediate or advanced course with a grade of A or B. See the section on departmental procedures above for further information on placement and validating credit.	
Additional 300- or 400- level language courses in Chinese or Japanese	12
Students must complete all the required language coursework in their single chosen language (Chinese or Japanese). Language courses include all courses taught in the target language, as well as JPN 410 or CHIN 410.	
Chinese 370 or Japanese 370	3
Approved 300- or 400-level electives in Chinese/Japanese culture	6
Students are to select electives from courses taught by the department or in related fields, as approved by the area advisor.	
General Electives	40
Depending on choices in their Core Curriculum coursework and East Asian electives, students may need to take up to 21 hours in 300- and 400-level courses to meet the senior institution requirement.	
Total	120
Students must complete all the required coursework in their single chosen language (that is, in Chinese or Japanese). Students in the College of Liberal Arts can count the first six hours of the minor toward the College language requirement. At least three hours must be taken in a regularly scheduled 300- or 400-level course at SIUC.	

East Asian Civilization Minor

Degree Requirements	Credit Hours
East Asian Courses	15

Degree Requirements	Credit Hours
<p>A minor in East Asian Civilization consists of 15 hours of coursework in Chinese, Japanese, or East Asian studies. Courses must be approved by the area advisor. At least three hours must be taken in a regularly scheduled course at SIUC.</p>	

French, German, or Spanish

Bachelors in Languages, Cultures, and International Studies: Specializations in French, German, or Spanish

French, German, or Spanish are among the most commonly spoken languages in the world, and knowledge of them can

open the door to a variety of job opportunities both in the US and abroad. Students in each of these three specializations will gain advanced-level language proficiency and knowledge of the rich history, culture, and literature of people who speak the target language. Students will learn how to think critically across cultures through analysis of beliefs, media, customs, and artifacts. In the course of their language study, students will gain the ability to discuss how and why their chosen language differs from English, helping them to understand how language works in general and how English and the language they study work in particular. The French, German, or Spanish specializations are flexible enough to allow students to study a second field as well, widening their intellectual and career horizons still further.

French, German, or Spanish students may choose to enter the Teacher Education Program in conjunction with the College of Education and Human Services and pursue a K-12 teaching license in the State of Illinois. Students doing so may choose to earn a B.A. through the College of Liberal Arts or a B.S. through the College of Education and Human Services.

Specializations in French, German, or Spanish (Without K-12 Teaching License)

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
<p>Modern language students receive three credit hours of Core humanities credit for a third semester or higher in their language. See chapter three for details on Core Curriculum requirements.</p>	
College of Liberal Arts Requirements	12
<p>French, German, or Spanish students will meet the six credit-hour College language requirement during the course of their language study. See chapter four for details on College of Liberal Arts requirements.</p>	
Courses in French, German, or Spanish	
<p>Transfer students planning to complete the specializations in French, German, or Spanish must complete a minimum of 12 semester hours of courses, including at least one</p>	

Degree Requirements	Credit Hours
300- or 400-level language course in that language, at Southern Illinois University Carbondale.	
French, German, or Spanish through 320B	9
<p>French, German, or Spanish specialists starting their language study at SIUC will need to complete three years (18 credit hours) in their chosen language to reach and complete 320B, but of these 18 hours, six are counted above toward the College of Liberal Arts language requirement and three are counted toward Core Curriculum humanities credit, leaving only nine additional hours to list here. Students with prior experience in the language should begin at the appropriate higher level and will require fewer total hours in language study. They will also receive up to six hours of validating credit by successfully completing an intermediate or advanced course with a grade of A or B. See the section on departmental procedures above for further information on placement and validating credit.</p>	
Language electives at the 300- and 400-level	21
<p>• Two of these courses must be at the 400-level. • One of these courses must be in literature. • One of these courses must be in culture (including 370A/B or another course approved by the language advisor). • One of these courses must be writing intensive (either College of Liberal Arts Writing-Across-the-Curriculum compliant or approved by the language advisor). The same 300- or 400-level class may count toward more than one of these requirements. Students must complete all the required coursework in their single chosen language (that is, in French, German, or Spanish). Departmental courses taught in English do not normally count toward these language specializations, but, with the approval of the language advisor, a student may count a departmental course taught in English or a relevant course taken in another department. In such cases, the advisor may require that assignments be done in the foreign language and may restrict this option to students with high language proficiency, such as those who have done intensive study abroad.</p>	
General Electives	37
<p>Depending on their choices of Core Curriculum classes, students may need to complete up to 15 hours in 300- or 400-level coursework to meet the senior institution requirement of 42 such hours.</p>	
Total	120

TEACHER EDUCATION PROGRAM

French, German, or Spanish

Students specializing in French, German, or Spanish and pursuing a K-12 teaching license may choose to earn a B.A. from the College of Liberal Arts or a B.S. from the College of Education and Human Services. Students completing either degree will acquire the necessary training and licensure to pursue a career in foreign language education at the secondary level. Whichever degree they pursue, students must work closely with advisors in both the Department of Languages, Cultures, and International Trade and the Teacher Education Program (TEP) to ensure that they are meeting all degree and teaching licensure requirements in a timely manner.

Bachelors in Languages, Cultures, and International Studies, College of Liberal Arts, Specializations in French, German, or Spanish with K-12 Teaching License Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Students pursuing teaching licensure must take EDUC 211 and EDUC 214 as part of their TEP requirements; EDUC 211 meets the multicultural requirement, and EDUC 214 covers three of their six social science hours for the Core. Language students in the TEP receive three credit hours of Core humanities credit for a third semester or higher in their language. See chapter three for details on University Core Curriculum requirements.	
College of Liberal Arts Requirements	12
French, German, or Spanish students will meet the six credit-hour College language requirement during the course of their language study, and will require only the six hours in international coursework required by the College. The international coursework requirement can be met by courses which also meet Core Curriculum requirements. See chapter four for details on College of Liberal Arts requirements.	
Language Area Requirements	
French, German, or Spanish through 320B	12
French, German, or Spanish specialists starting their language study at SIUC will need to complete three years (18 credit hours) in their chosen language to reach and complete 320B, but of these 18 hours, six are counted above toward the College of Liberal Arts language requirement, leaving only twelve additional hours to list here. Students with prior experience in the language should begin at the appropriate higher level, and will require fewer total hours in language study. They will also receive up to six hours of validating credit by successfully completing an intermediate or advanced course with	

Degree Requirements	Credit Hours
a grade of A or B. See the section on departmental procedures above for further information on placement and validating credit.	
FL 436 (Methods in Teaching World Languages)	3
Language electives at the 300 and 400 level	18
<ul style="list-style-type: none"> • Two of these language elective courses must be at the 400 level. • One of these courses must be in literature. • One of these courses must be in culture (including 370A/B or another course approved by the language advisor). • One of these courses must be writing intensive (either College of Liberal Arts Writing Across the Curriculum compliant or approved by the language advisor). The same 300- or 400-level class may count toward more than one of these requirements. Students must complete all the required coursework (outside FL 436) in their single chosen language (that is, in French, German, or Spanish). Departmental courses taught in English do not normally count toward these language specializations, but, with the approval of the language advisor, a student may count a departmental course taught in English or a relevant course taken in another department. The advisor may in such cases require that assignments be done in the foreign language and may restrict this option to students with high language proficiency, such as those who have done intensive study abroad. 	
Teacher Education Program requirements	27
See the Teacher Education Program listing in this catalog for details on education requirements. In addition to the 27 hours listed here, EDUC 211 and EDUC 214 are also required for the TEP program, but as these classes also count toward Core Curriculum requirements, these hours are counted with the Core Curriculum hours above and not listed again here.	
General Electives	17
Students who effectively double-dip by meeting TEP requirements while also meeting their Core Curriculum requirements will have seven hours to spare for electives.	
Total	120

Bachelors in Languages, Cultures, and International Studies, College of Education and Human Services Specializations in French, German, or Spanish With K-12 Teaching License Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
<p>Students pursuing teaching licensure must take EDUC 211 and EDUC 214 as part of their TEP requirements, and can count them toward Core requirements as well; EDUC 211 meets the multicultural requirement, and EDUC 214 covers three of their six social science hours for the Core. Language students in the TEP receive three credit hours of Core humanities credit for a third semester or higher in their language. See Chapter 3 for details on Core Curriculum requirements.</p>	
Language Area Requirements	
<p>Transfer students planning to complete the specializations in French, German, or Spanish must complete a minimum of 12 semester hours of courses, including at least one 300- or 400-level language course in that language, at Southern Illinois University Carbondale.</p>	
French, German, or Spanish through 320B	18
<p>French, German, or Spanish specialists starting their language study at SIUC will need to complete three years (18 credit hours) in their chosen language to reach and complete 320B. Students with prior experience in the language should begin at the appropriate higher level, and will require fewer total hours in language study. They will also receive up to six hours of validating credit by successfully completing an intermediate or advanced course with a grade of A or B. See the section on departmental procedures above for further information on placement and validating credit.</p>	
FL 436 (Methods in Teaching World Languages)	3
Language electives at the 300 and 400 level	18
<ul style="list-style-type: none"> • Two of these language elective courses must be at the 400 level. • One of these courses must be in literature. • One of these courses must be in culture (including 370A/B or another course approved by the language advisor). • One of these courses must be writing intensive (either College of Liberal Arts Writing-Across-the-Curriculum compliant or approved by the language advisor). The same 300- or 400-level class may count toward more than one of these requirements. Students must complete all the required coursework (outside FL 436) in their single chosen language (that is, in French, German, or Spanish). Departmental courses taught in English do not normally 	

Degree Requirements	Credit Hours
count toward these language specializations, but, with the approval of the language advisor, a student may count a departmental course taught in English or a relevant course taken in another department. The advisor may in such cases require that assignments be done in the foreign language and may restrict this option to students with high language proficiency, such as those who have done intensive study abroad.	
Education Requirements	27
See the Teacher Education Program for details on education requirements. In addition to the 27 hours listed here, EDUC 211 and EDUC 214 are also required for the TEP program, but as these classes also count toward University Core Curriculum requirements, these hours are counted with the University Core Curriculum hours above and not listed again here.	
General Electives	13
Students who effectively double-dip by meeting TEP requirements while also meeting their University Core Curriculum requirements will have 13 hours to spare for electives.	
Total	120

Minors in French, German, or Spanish Requirements

Degree Requirements	Credit Hours
French, German, or Spanish 201A and 201B	6
French, German, or Spanish 320A and 320B	6
Approved language area electives	6
Total (after first year)	18
A minor in French, German, or Spanish requires 18 hours of coursework, not including first year language classes. Students starting a new language at SIUC will need to complete first year language study (2 three credit hours courses) before embarking on the second year. Students must complete all the required coursework in their single chosen language area (that is, entirely in French, German, or Spanish). At least three hours must be taken in a regularly scheduled 300- or 400-level course at SIUC.	

Minor in American Sign Language

Degree Requirements	Credit Hours
FL 120A and FL 120B	6
FL 220A and FL 220B	6
FL 370	3
Total	15

A minor in American Sign Language (ASL) will enable students to gain intermediate level proficiency in ASL while introducing them to deaf culture, literature, and education. Students must complete at least three hours toward the minor in a regularly scheduled class at SIUC.

Foreign Language and International Trade

The Foreign Language and International Trade program combines education in the liberal arts with preparation for careers in the international business community. It is designed to combine skill in a foreign language with a fundamental understanding of international commerce. This is accomplished by a curriculum of studies which has two cores—one in language and one in international trade and related subject matters. This cross-disciplinary program allows for choice of language (Chinese, French, German, Japanese, or Spanish) as well as some options in electives so that different interests may be accommodated and individual goals may be realized. The chosen language cannot be the student's native language, nor can it be English.

At or near the end of the program of studies, application and expansion of the knowledge and skills gained by the student through course work is provided by an internship. Prerequisite to the internship are senior standing, a minimum 2.75 SIUC GPA.

No grade lower than C will be accepted for any course required by the major (including ECON 302I, ENGL 101 and 102, FL 301I, MATH 139 and PSYC 102) taken at any institution at any time. A minimum grade of B is required in the appropriate SIUC 320B language course. All off-campus courses fulfilling major requirements must be pre-approved by the Director of FLIT. A minimum 2.75 SIUC GPA is required for graduation.

Bachelors in Languages, Cultures, and International Studies, Specialization in Foreign Language and International Trade Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
As part of their Core Curriculum requirements, LCIS students must take ECON 302I; ENGL 101 and 102; FL 301I; MATH 139; and PSYC 102. LCIS students will receive three hours in Core humanities credit by completing 201A or higher in their chosen language.	
College of Liberal Arts Requirements	6

The six hour language requirement will be met by LCIS students in the course of their language study (see below).

Degree Requirements	Credit Hours
LCIS students meet the additional six hour international coursework requirement by taking FL 301I and ECON 302I for their Core requirements listed above (and so those hours are not listed here). See chapter four for details on College of Liberal Arts requirements.	
Chinese, French, German, Japanese or Spanish through 320B	9
<p>To complete 320B, students who start their language study Undergraduate Curricula and Faculty Language and Culture/325 at SIUC will need to complete three years (18 credit hours) in their chosen language, but of these 18 hours, six are counted above toward the College of Liberal Arts language requirement and three are counted toward Core Curriculum humanities credit, leaving only nine additional hours to list here. Students with prior experience in the language should begin at the appropriate higher level, and will require fewer total hours in language study. They will also receive up to six hours of validating credit by successfully completing an intermediate or advanced course with a grade of A or B. See the section on departmental procedures above for further information on placement and validating credit.</p>	
5 electives at the 300-400 level (one culture course). 370 and 435 strongly recommended. Students must complete all the required language coursework in their single chosen target language. In French, German, or Spanish.	
Other Departmental Requirements	1-12
<p>Either FL 495 Professional Experience in an International Context (1-12 credits) or a minimum of 8 weeks and 12 credit hours of approved Study Abroad experience. Individual language sections may require a project in conjunction with Study Abroad.</p>	
ACCT 220, ACCT 230	6
CS 200B or ISAT 229	3
ECON 240, ECON 241, ECON 329	9
FIN 330	3
MGMT 202, MGMT 304, MGMT 345	9
MGMT 208 or ACCT 208 or ECON 308	3
MKTG 304; and either MKTG 336 or MKTG 435	6
MATH 140 (prerequisite for several of the above)	4
Total Business Related Courses	43

Degree Requirements	Credit Hours
General Elective	3
Total	120
For your individualized curricular guide, see your Student Education Planner in DegreeWorks.	

International Studies

Bachelors in Languages, Cultures, and International Studies, (LCIS), Specializations in:

- African and Middle Eastern Studies
- Asian and South Pacific Studies
- European Studies
- Latin American and Caribbean Studies

Students in international studies area earn the LCIS major with one of the four regional specializations listed above. All international studies students pursue a multidisciplinary program designed to provide them with a knowledge of comparative global and international issues and an understanding of other cultures, as well as a deeper acquaintance with their chosen region. Students will develop intercultural skills, acquire meaningful proficiency in a foreign language, and prepare for citizenship, both local and global, and for careers that benefit from an international perspective.

Our multidisciplinary program features three components: 1) a regional focus in one of four broad geographic areas, which determines the formal specialization under the major; 2) study of global and international comparative issues; and 3) foreign language competency. The choices within the regional areas are interdisciplinary but structured to provide depth in a particular area to balance the broad overview emphasized in the global comparative issues courses.

Because of the program's multidisciplinary nature, courses must be selected in close consultation with the International

Studies Advisor. Course descriptions are available under the appropriate department under which the individual courses are listed. Since the program emphasizes a closer familiarity with a specific region, it is strongly recommended that International Studies students take part in an overseas study program in the corresponding region, which can be arranged through the Study Abroad Programs office. Students may substitute study abroad for two appropriate courses in category III below (Regional Focus). International study opportunities are administered by the SIUC Study Abroad Programs office (ips.siu.edu/sa).

Admission to the program is open to incoming and current students. No course can be counted toward any International Studies specialization with a grade lower than C.

Bachelors in Languages, Cultures, and International Studies, (LCIS), Specializations Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39

International Studies students will receive three credit hours of Core humanities credit for a third semester or higher in their language. See chapter three for details on Core Curriculum requirements. The following Core Curriculum choices are recommended but not required for International Studies. In Humanities: In addition

Degree Requirements	Credit Hours
<p>to three hours of foreign language (201A or higher), three additional hours in humanities are required. Recommended are: HIST 101A, 101B, PHIL 103A, 103B. In Social Science (six hours are required): Recommended are: ANTH 104, ECON 113, GEOG 103, 300I, HIST 112, JRNL 306I, POLS 372I. In Integrative Studies (three hours required): Recommended are: FL 301I, POLS 352I, SOC 304I, CMST 301I, WGSS 320I.</p>	
College of Liberal Arts Requirements	12
<p>International Studies students will meet the six hour College of Liberal Arts language requirement in the course of their language study. They will meet the six hour international coursework requirement through required courses in Global and International Comparative Issues listed below. See chapter four for details on College of Liberal Arts requirements.</p>	
International Studies Requirements	
I. International Studies Introductory Seminar - FL105	1
II. Global and International Comparative Issues: Five courses	9
<p>International Studies students must take five courses totaling 15 hours; six have been counted toward College of Liberal Arts requirements above, leaving only nine hours to count here. Choose five courses from the following: AFR 472; ANTH 202, 240D or B, 370, 410 (A,D,G,I,L,Q,O,S), 426; CCJ 340; ECON 302I, 322, 329, 429; FIN 464; FL 301I; GEOG 300I, 304, 310I, 435, 439; HED 485; JRNL 306I; LING 320I, 341, 426; PHIL 441; POLS 207, 270, 352I, 372I, 373, 375, 403, 455, 456, 476, 480; PSYC 470; SOC 304I, 307, 371, 437, 438, 476; CMST 301I, 341, 440, 441, 448; WGSS 320I, 426, 446, or approved equivalents.</p>	
III. Regional Focus: Five courses	15
<p>A. Africa and the Middle East: AFR 225, 271, 310A, 314A/B, 320, 375, 410H, 465; ANTH 310A/F, 410H; FR 200, 476; HIST 383, 384, 385, 387A/B, 486, 488, 489; POLS 467; WGSS 200, 489. B. Asia and the South Pacific: CHIN 370, 410, 435, 470; EA 300, 370; HIST 380A/B, 381, 471, 479, 480A/B; JPN 370, 410, 435; PHIL 308I, 475, 477, 478, 479; POLS 461. C. Europe: ANTH 310D; ENGL 453, 455, 464, 465; FR 200, 311, 370, 435, 460, 470; GER 337, 370, 381, 435, 460, 465, 481; HIST 312, 320, 324, 328, 334, 337, 338, 340, 406B, 425A/B, 426, 427, 444; PHIL 482; POLS 459, 460; SPAN 304, 310, 335, 370A, 411, 435, 460, 465; WGSS 200, 348, 406B. D. Latin America and the Caribbean: ANTH 204, 206, 302, 310C/E/I, 430B/F; ECON 419; ENGL 446; FR 476; GEOG 303I; HIST 470;</p>	

Degree Requirements	Credit Hours
PHIL 360; POLS 316; SPAN 304, 310, 335, 370B, 434, 435, 461.	
IV. Senior project, paper, or presentation (FL 492)	1
V. Language proficiency: 320B plus one elective	12
<p>Students must demonstrate intermediate level proficiency in a language other than English by one of the following means: a) Complete the sequence in the target language through 320B and at least one SIUC elective course in the target language of which 201B (or higher) is a prerequisite; or b) Do coursework at another institution, pass a proficiency exam, or otherwise demonstrate that they have the equivalent level of language proficiency. For details on the precise level required in each language, and how to demonstrate this level of proficiency, contact the department. Students without any prior experience in the language will need 21 hours of coursework in total, but as three hours have been counted above as humanities Core credit and six hours have been counted above under the College language requirement, only 12 hours remain to be counted here. Students with prior experience in the language should begin at the appropriate higher level, and will thus require fewer hours in language study. They will also receive up to 6 hours of validating credit by successfully completing an intermediate or advanced course with a grade of A or B. See the section on departmental procedures above for further information on placement and validating credit.</p>	
Total International Studies Requirements	47
Electives	29
<p>Most Global Comparative Issues courses and Regional Focus courses are at the 300- or 400 level, and if a student takes only 300- or 400-level classes to meet their Global and Regional requirements, those courses, together with their 300- and 400-level language courses, will put them only two credits short of the 42 credit senior institution requirement for 300- and 400-level coursework. Students who choose to take 200 level courses to meet Global and Regional requirements will need to take two 300 or 400 level electives to meet the 42 hour senior institution requirement.</p>	
Total	120

Minor in International Studies

Degree Requirements	Credit Hours
Global and International Studies: Introductory Seminar (FL 105)	1
Global and International Comparative Issues (3 courses)	9
Regional Focus (3 courses)	9
See the lists above for Global and International Comparative Issues courses and Regional Focus courses. Course selections must be approved by the International Studies Advisor.	
World Language Proficiency	12
Students must demonstrate proficiency at the fourth-semester level (201B or higher), which can be met by earning a minimum grade of C in 201B, by validating credit, or by otherwise demonstrating the equivalent level of language proficiency. Students starting a new language at SIUC will require 12 hours of coursework to meet this requirement. Contact the department for details on validating credit and other ways to demonstrate the required level of proficiency.	
Study Abroad (optional): Students are strongly encouraged to participate in a study-abroad program for at least one semester. Three hours of study-abroad credits from the appropriate region may substitute for one course from the Regional Focus category.	

Languages, Cultures, and International Studies Courses

Languages, Cultures, and International Studies Faculty

Albuxech, Lourdes, Associate Professor, Ph.D. University of California Riverside, 1997.
Allen, Mont, Assistant Professor, Ph.D., University of California, Berkeley. 2014
Betz, Frederick, Professor, Emeritus, Ph.D., Indiana University, 1973.
Bricker, Mary, Assistant Professor, Ph.D., University of Illinois Urbana-Champaign. 2011.
Cáceres, Alejandro, Associate Professor, Ph.D., Indiana University, 1992.
Daffner, Carola, Associate Professor, Ph.D., Vanderbilt University, 2008.
Hartman, Steven Lee, Associate Professor, Emeritus, Ph.D., University of Wisconsin, 1971.
Haubenreich, Jacob, Assistant Professor, Ph.D., University of California, Berkeley. 2013.
Johnson, David M., Associate Professor, Ph.D., University of North Carolina, Chapel Hill, 1996.
Karayannis, Dimitrios H., Senior Lecturer, Emeritus, M.A., Southern Illinois University Carbondale, 1990.
Keller, Thomas, Associate Professor, Emeritus, Ph.D., University of Colorado Boulder, 1975.
Kim, Alan Hyun-Oak, Professor, Ph.D., University of Southern California, 1985.
Liedloff, Helmut, Professor, Emeritus, Ph.D., Philips University, Germany, 1956.

Maisier, Véronique, Professor, Ph.D., University of Paris-Sorbonne, 1998.
O'Brien, Joan, Professor, Emerita, Ph.D., Fordham University, 1961.
Smith, Jennifer, Associate Professor, Ph.D., Indiana University, 2005.
Stahl, Lidia, C., Lecturer, Emerita M.A., Southern Illinois University Carbondale, 1981.
Thibeault, Brooke, Senior Lecturer, Emerita, M.S., Southern Illinois University Carbondale, 2001.
Timpe, Eugene F., Professor, Emeritus, Ph.D., University of Southern California, 1960.
Walker, Pamela J., Senior Lecturer, M.A., Gallaudet University, 1984.
Winston-Allen, C. Anne, Professor, Emerita, Ph.D., University of Kansas, 1979.

Linguistics

Language is both a means of social communication and a unique property of the human mind. As such, linguistics - the scientific study of language - has a broad appeal to students who are interested in the social sciences, the humanities, computer science, or the life sciences. The undergraduate program in linguistics helps students understand the diversity of human modes of communication, the social and psychological origins of language, and the processes by which languages are learned and lost. A major in linguistics thus provides students with a focused but broad-based education in the liberal arts. In addition, the way linguists think about their subject has greatly influenced the development of other disciplines such as anthropology, computer science, language teaching, philosophy, psychology, and sociology. A degree in linguistics will thus be of great value to students intending to pursue careers in those fields.

Graduates of the linguistics program who enter the work force immediately after graduating find employment in a wide variety of settings as teachers, writers, translators, editors, civil servants, community developers, etc. Graduates who go on to advanced study find themselves well prepared for professional careers in fields such as linguistics, language teaching, educational administration, language planning, language research, speech pathology, lexicography, publishing, and foreign service.

Two tracks are available in the B.A. degree in Linguistics. The first track provides students with a solid grounding in linguistic theory and application; the second track focuses primarily on teaching English to new speakers of the language in an ESL or bilingual setting. Majors in both tracks are required to obtain a grade of C or better in each of the core courses.

Since the study of theoretical linguistics involves analysis of languages other than one's native language, the linguistics track requires either one year of an uncommon or non-Western language or two years of any other foreign language. The ESL/Bilingual Education/ENL track requires one year of study of any foreign language, to allow time for additional coursework that ESL/ENL students may choose to take in order to obtain an endorsement to a Professional Educator License. Either course of study satisfies the foreign language requirement of the College of Liberal Arts.

The linguistics track of the major consists of a minimum of 33 semester hours. This includes 12 hours of required foundation courses and 21 hours chosen from linguistic electives covering a broad range of subfields within the discipline. This flexibility allows linguistics students to double-major in a variety of other fields.

Required courses: (12 semester hours)

LING 200 Language, Society, and the Mind
LING 300 Introduction to Descriptive Linguistics
LING 405 Introduction to Phonological Theories
LING 408 Introduction to Syntactic Theory

The 21 hours of electives may include (but are not limited to) courses on the following list. They must include 15 hours at the 400-level including a linguistics course designated Writing Across the Curriculum (WAC). Up to six hours may be drawn from other departments such as English, Psychology, Anthropology, and Languages, Cultures, and International Trade, subject to approval of the Linguistics faculty.

Sampling of acceptable electives (21 semester hours)

LING 320I Language, Gender, and Power
LING 340 Second Language Acquisition

LING 400 Formal Semantics
 LING 402 Phonetics
 LING 406 Introduction to Historical Linguistics (WAC)
 LING 415 Sociolinguistics
 LING 426 Gender, Culture, and Language
 LING 440 Topics in Linguistics (may be repeated)
 LING 443 Bilingualism
 LING 445 Psycholinguistics
 LING 452 Field Methods in Linguistics (WAC; may be repeated)

The major in linguistics with specialization in English as a Second Language (ESL)/Bilingual Education, also known as English as a New Language (ENL), consists of 33 semester hours comprising a core of basic courses in the structure of the English language and pedagogical methods.

Required Courses for ESL/ENL BA:

LING 200 Language, Society, and the Mind or 201 Language Diversity in the USA
 LING 300 Introduction to Descriptive Linguistics
 LING 340 Second Language Acquisition
 LING 341 Introduction to Intercultural Communication
 LING 353 Methods and Materials of TESOL
 LING 431 Pedagogical Grammar
 LING 470 Theoretical Foundations of Teaching ESL and Bilingual Students
 LING 472 Assessment of ESL and Bilingual Students

In addition to these core courses, nine semester hours of Linguistics electives are also required.

Bachelor of Arts Degree in Linguistics, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	14
Requirements for Major in Linguistics	33
Core courses: LING 200, LING 300, LING 405, and LING 408 each with a grade of C or better	12
Electives: 21 credit hours, nine of which must be at the 400 level. The remainder may be at the 300- or 400-level. Three of the 12 hours may be taken outside the linguistics department with the permission of the department's undergraduate advisor	21
Foreign Language Requirements (satisfies the College foreign language requirement)	6-16
Electives	16-26
Total	120

Bachelor of Arts Degree in Linguistics

Specialization in ESL/Bilingual Education/ENL, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Requirements (See courses required for COLA)	14
Requirements for Major in Linguistics, ESL/Bilingual Education/ENL	33
Core courses: LING 200 or LING 201, LING 300, LING 340, LING 341, LING 353, LING 431, LING 470, LING 472, each with a grade of C or better.	
Electives: Choose nine hours of linguistics courses at the 300- or 400-level. This may include LING 440 taken up to three times with different topics.	
Foreign Language Requirements (satisfies the College foreign language requirement)	6-16
Electives	16-26
Total	120

Linguistics Minor

The minor in linguistics is 18 hours of study and draws upon core courses from the Department of Linguistics. It introduces students to the science of language and to aspects of linguistic structure and language use. A minor in linguistics may be of special interest to students in anthropology, computer science, English, foreign languages and literatures, mathematics, philosophy, psychology, sociology, communication studies, and communication disorders and sciences.

Course requirements for the minor in linguistics are LING 200 and LING 300, plus at least four additional LING courses (12 semester hours) including two (six semester hours) at the 400-level. LING 480A does not count toward the minor in linguistics.

Linguistics Courses

LING100 - Speaking & Listening in ESL 100-3 Speaking and Listening in English as a Second Language. Oral conversational and academic English. An elective for students who do not speak English as their first language. Classes are offered at beginning, intermediate, and advanced levels. May be repeated at three different levels for a maximum of 9 credit hours. Mandatory Pass/Fail.

LING101 - English Composition I for ESL 101-3 English Composition I for ESL Students. (University Core Curriculum) [IAI Course: C1 900] The first course in the university's two-course required composition sequence designed for ESL students. This course helps ESL writers become more comfortable with and proficient in academic writing in English. To this end, Linguistics 101 teaches students processes and strategies for planning, drafting, revising, and editing their English writing for academic audiences. Course assignments focus on writing from primary and secondary sources. ESL equivalent to University Core Curriculum English 101.

LING102 - English Composition II for ESL 102-3 English Composition II for ESL Students. (University Core Curriculum) [IAI Course: C1 901R] The second course in the university's two-course required composition sequence designed for ESL students. This course helps ESL writers become more comfortable with and proficient in research writing for academic audiences. Linguistics 102 focuses on writing from secondary sources, teaching students processes and strategies for planning, drafting, revising, and editing papers that incorporate published material. All aspects of the research process are addressed, from locating and evaluating relevant sources to incorporating and documenting these sources in papers written for various purposes. Students must earn a grade of C or better in LING 101 or ENGL 101 before beginning LING 102. For credit in the University Core Curriculum, students must earn a "C" or better in 102. Equivalent to University Core Curriculum ENGL 102. Prerequisite: LING 101 or ENGL 101.

LING104 - Grammar in Language 104-3 Grammar in Language. Description and explanation of the major grammatical categories and structures found in a wide variety of languages, including English. Consideration of the role of language structures in such topics as the nature, origin, acquisition, and variation of language. Course is designed to give students insight into the basic concepts of grammar and show their interrelationship, importance, and functioning in human language.

LING200 - Language, Society and the Mind 200-3 Language, Society, and the Mind. (University Core Curriculum) What distinguishes humans from other animals? This course addresses how language is a uniquely human phenomenon by exploring issues in language and society and psychological aspects of language use. Topics include language in conversation, differences between speakers of different ages/genders/regions/social groups, first and second language acquisition, bilingualism, language meaning and change, and the relationship between language and culture.

LING201 - Language Diversity in the USA 201-3 Language Diversity in the USA. (University Core Curriculum) An examination of different varieties of English and the growing presence of other languages in the United States. Local, regional, and national perspectives are used to review current patterns of language diversity and to explore the impact of language issues on policies and practices in education, the legal system, and the work place.

LING290 - Advanced English Comp for ESL 290-3 Advanced English Composition for ESL Students. This course helps ESL writers refine their writing in English, with a focus on broadening their understanding of the rhetorical expectations of the types of writing done in their professional disciplines, both in academia and in industry. Assignments focus on the exploration of research methods and writing tasks involved in various fields and in the job application process. Students must earn a grade of C or better in LING 102 or ENGL 102 before beginning LING 290. Prerequisite: LING 101 or ENGL 101 and LING 102 or ENGL 102.

LING298 - Multicultural Applied Experience 298-1 Multicultural Applied Experience. (Multicultural Applied Experience Course) An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race, or class. Students can sign up for the one-credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements, and supervision. Graded Pass/Fail.

LING300 - Intro to Descript Linguistics 300-3 Introduction to Descriptive Linguistics. An introductory survey of descriptive and theoretical linguistics: assumptions, methods, goals, terminology, and data manipulation.

LING301 - Language in Culture & Society 301-3 Language in Culture and Society. (Same as ANTH 301) The problem of the uniqueness of human language and how it fits into culture and society. The origin and development of language. Topics covered include animal and human communication, language and world view, and the meaning of meaning.

LING302 - Invented Languages 302-3 From Esperanto to Dothraki: The Linguistic Reality of Invented Languages. Invented or constructed languages (ConLangs) such as Elvish, Klingon, and Dothraki have become firmly established within the public consciousness, most of them created by trained linguists. But how plausible are these languages? In what ways are they informed by documentation work on

existing languages and cultures throughout the world? This course seeks to gain an understanding of the motivations, methods, means (and sometimes madness) of the language inventor and of how invented languages fit within the broader typology of the world's languages and cultures.

LING320I - Language, Gender, and Power 320I-3 Language, Gender, and Power. (University Core Curriculum) (Same as WGSS 320I) This course looks at language practices and men and women from different cultures in terms of how speech reflects and shapes their social identities. Perspectives from the field of linguistics, anthropology, psychology, sociology, and speech communication will be used.

LING330 - Language and Behavior 330-3 Language and Behavior. A wide-ranging examination of the implications of language study for people's view of themselves and their place in the world. Topics deal with the pervasiveness of verbal and non-verbal language in various aspects of modern society.

LING340 - Second Language Acquisition 340-3 Second Language Acquisition. (Same as PSYC 345) Introduction to key concepts and major theoretical and methodological issues in SLA research. Examines major developments in SLA in the areas of phonology, morphology, lexis, syntax, semantics, pragmatics, and discourse and provides students with hands-on experience in describing and accounting for L2 data. An opportunity to design and implement a data-based study in an area of interest to students. Prerequisite: LING 300 or consent of instructor.

LING341 - Intro to Intercultural Comm 341-3 Introduction to Intercultural Communication. (See CMST 341)

LING353 - TESOL Theory/Methods 353-3 Theory and Methods of TESOL. Theory and methods to teach ESL/EFL. Promotes eclecticism through reflective practice; overview of methods from early grammar translation to cognitive and communicative, integrated skills, technology, and content-based approaches. Lecture, readings, discussion, demonstration, material review, lesson planning, micro-teaching.

LING382 - Course Design for TESOL 382-3 Course Design for TESOL. Overview of issues and procedures in the design and implementation of courses for TESOL. Particular attention is given to recent developments such as content-based instruction. All major course components such as setting of objectives, syllabus design, content specification, and evaluation are considered. In addition, resources available for addressing these issues will be discussed. Prerequisite: LING 300 and LING 353, or consent of instructor.

LING400 - Formal Semantics 400-3 Formal Semantics. This course will introduce and develop formal mechanisms to encode meaning in natural language. We will deeply explore the topics of predication, definiteness, quantification, and semantic modeling. Mastery of these topics can be applied to many other semantic phenomena. By the end students will be able to: understand and evaluate scholarly literature in semantics; approach problems in natural language from the perspective of a formal semanticist; understand and describe the role of semantics in generative approaches to language; and produce novel work in semantics.

LING402 - Phonetics 402-3 Phonetics. Theory and practice of articulatory phonetics.

LING403 - English Phonology 403-3 English Phonology. Study of English phonology, including phonetics, phonemics, and prosodics. Prerequisite: LING 300 or graduate status or consent of department.

LING404 - American Dialects 404-3 American Dialects. Regional variation and social stratification of American English. Phonological and syntactic differences among the major dialects of American English. Prerequisite: LING 300 or graduate status or consent of department.

LING405 - Intro to Phonological Theories 405-3 Introduction to Phonological Theories. A survey of various phonological theories from the 19th century up to the present, including theoretical issues arising therefrom and relationships among the theories. Limited data analysis within the perspectives of the different theories. Not open to those who have taken LING 503. Prerequisite: LING 300 or consent of department.

LING406 - Intro Historical Linguistics 406-3 Introduction to Historical Linguistics. (Same as ANTH 406) An introductory survey of historical and comparative linguistics, including terminology, assumptions, and methods of investigation. Satisfies the CoLA Writing-Across-the-Curriculum requirement. Not open

to graduate students in Linguistics. Prerequisites: LING 300, LING 405 (may be taken concurrently), or consent of department.

LING408 - Intro to Syntactic Theory 408-3 Introduction to Syntactic Theory. This course is an introduction to the major concepts and issues in generative grammar. Data from English and other languages will be examined and students will be provided with numerous opportunities to solve problems in syntax. Students will also be given an opportunity to carry out an individual project in syntax. Not open to those who have taken LING 508. Prerequisite: LING 300 or consent of department.

LING415 - Sociolinguistics 415-3 Sociolinguistics. (Same as ANTH 415) History, methodology, and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, pidgin and creole languages, and language planning. Prerequisite: LING 300 or Graduate status or consent of instructor.

LING416 - Spanish in the U.S.A. 416-3 Spanish in the U.S.A. (Same as ANTH 416) This course offers a survey of the historical, social, political, linguistic, and educational issues surrounding the Spanish language in the United States. Topics to be addressed include Spanish language use and bilingualism, language maintenance and shift, education of Latino populations, Hispanic diversity, and Latino literature.

LING417 - Language Contact 417-3 Language Contact. (Same as ANTH 417) This course will introduce students to the social conditions under which language contact occurs and the cultural and linguistic consequences of such contact. Primary topics will be language maintenance and shift, ideologies and attitudes regarding bilingualism, and language development and change, using data from a variety of languages and cultures. Designed to provide a comprehensive background for research on bi- or multilingual settings. Prerequisite: one of the following: ANTH 240B, LING 200, LING 300, ANTH 500B, or LING 505.

LING426 - Gender, Culture, & Language 426-3 Gender, Culture, and Language. (Same as WGSS 426 and ANTH 426) This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological- and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered language use.

LING430 - Grammatical Structures 430-3 to 6 (3,3) Grammatical Structures. Detailed analysis of the structure of particular languages. May be repeated to a total of six hours credit with consent of department. Prerequisite: LING 300 or graduate status or consent of department.

LING431 - Pedagogical Grammar 431-3 Pedagogical Grammar. Explores relationship among language structure, learning, and teaching in order to understand the role of grammar in TESOL. Makes students more aware of how the English language works, the kinds of language that ESL learners (K-adult) produce and why they proceed through certain stages, and understand the role and effects of grammatical consciousness-raising on the development of ESL. Not open to those who have taken LING 531. Prerequisite: LING 300 or consent of department.

LING440 - Topics in Linguistics 440-3 to 9 (3 per topic) Topics in Linguistics. Selected topics in theoretical and applied linguistics. May be repeated to a total of nine hours credit under different topics. Not for graduate credit.

LING442 - Language Planning 442-3 Language Planning. Survey of the field of language planning: definitions and typologies, language problems, language treatment, attitudes and beliefs about language, relations between language planning processes and other kinds of social and economic planning, linguistic innovations and other processes of language change, implementation of language policies. Prerequisite: LING 300 or graduate status or consent of department.

LING443 - Bilingualism 443-3 Bilingualism. (Same as PSYC 443) Examines the linguistic, psycholinguistic, sociolinguistic, and educational aspects of bilingualism, particularly as pertaining to the care and education of bilingual children. Useful for teachers, speech therapists, doctors, psychologists, counselors, and others working with bilinguals. Practical applications and data-based research. Prerequisite: LING 300 or consent of instructor.

LING445 - Psycholinguistics 445-3 Psycholinguistics. (Same as PSYC 445) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems, and language and the brain. Prerequisite: LING 300 or graduate status or consent of instructor.

LING450 - Language Families 450-3 to 6 (3,3) Language Families. A synchronic survey of particular language families or sub-families. May be repeated to a total of six hours credit with consent of department. Prerequisite: LING 300 or graduate status or consent of instructor.

LING452 - Field Methods in Linguistics 452-3 Field Methods in Linguistics. At a time when minority languages are dwindling and becoming extinct, language documentation is more important than ever. This course has two pedagogical goals, related to the documentation of understudied languages. The first goal is to train students on the methods of eliciting and evaluating data to construct a detailed linguistic description and analysis of an unknown language, essentially from scratch, by working with a native speaker of the language. The second goal is for students to discover specific details of the structure of the language under investigation and document them for posterity. Satisfies the CoLA Writing-Across-the-Curriculum requirement. May be repeated for credit. Not open to those who have taken LING 552. Prerequisite: LING 300 and one of the following courses: LING 402, 403, 405, 408, with a minimum grade of C, or consent of instructor.

LING454 - Observation in TESOL 454-3 Observation and Practice in TESOL. Focused observation of a wide variety of classes in English as a second language and in foreign languages. Some supervised teaching or tutoring. Analysis of textbooks for TESOL. Not for graduate credit. Prerequisite: LING 353 or consent of department.

LING470 - Theor Found ESL/Bilingual Educ 470-3 Theoretical Foundations of ESL and Bilingual Education. Provides a broad overview of the field of bilingual education, including related terminology; historical, political, social, theoretical, international, economic, cultural, and legal aspects of bilingual education; and educational program models for serving LEP students.

LING471 - Bilingual Ed Methods/Materials 471-3 Bilingual Education Methods and Materials. Methods and materials for: bilingual content, biliteracy, sheltered and multicultural instruction, and for ELLs with disabilities; techniques for advocacy for ELLs, writing funding proposals, and conducting program reviews and workshops. Includes materials reviews, lesson planning, and micro-teaching.

LING472 - Assess ESL/Bilingual Students 472-3 Assessment of ESL and Bilingual Students. Assessment concepts and terminology; how to select, administer, and interpret standardized tests for English learners; develop traditional and alternative classroom tests of language and content instruction. Course includes lectures, readings, class discussions, and individual and group projects.

LING473 - Computer-Assist Lang Learning 473-3 Computer Assisted Language Learning. This hands-on course introduces essential concepts and skills for applying technology to language learning and instruction. Topics include online quizzes and activities, creating and editing multimedia objects for use in instructional materials, social networking, Web resources, evaluating commercial materials, digital storytelling, and hypermedia. New developments in CALL are introduced as the state of the art progresses. Not open to those who have taken LING 573.

LING480A - Less Common Lang-Elemtry 480A-3 to 12 Less Commonly Taught Languages. Elementary course in less commonly taught language. Languages vary. Section (A) corresponds to first semester, section (B) of the same language is a continuation of section (A). Must be taken in A, B sequence when available. Sequence may be repeated with a different language. Students must earn a grade of C or better in LING 480A before beginning LING 480B.

LING480B - Less Common Lang-Intermd 480B-3-12 Less Commonly Taught Languages. Elementary course in less commonly taught language. Languages vary. Section B is a continuation of section A. Must be taken in A, B sequence when available. Sequence may be repeated with a different language. Students must earn a grade of C or better in LING 480A before beginning LING 480B. Prerequisite: LING 480A.

LING485 - L2 Listen and Speak 485-3 Teaching Listening and Speaking in a Second Language. An introduction to current theories, principles, and techniques for teaching second language listening and speaking skills. Students will gain practical experience in developing meaningful listening and speaking activities/materials. Not open to those who have taken LING 585.

LING487 - Teaching Reading Second Lang 487-3 Teaching Reading in a Second Language. An introduction to first and second language reading theories and their application to teaching reading in a second language. The focus is on critical evaluation of published materials and developing a reading unit for a target second language group. Not open to those who have taken LING 587.

LING489 - Teach Vocab in a Second Lang 489-3 Teaching Vocabulary in a Second Language. An introduction to teaching second language vocabulary through a range of techniques. The course uses corpus data and emphasizes the importance of building collocational knowledge. Not open to those who have taken LING 589.

LING497 - Readings in Linguistics 497-1 to 8 Readings in Linguistics. Directed readings in selected topics in linguistics. Not for graduate credit. Special approval needed from the instructor.

LING500 - Formal Semantics 500-3 Formal Semantics. This course will introduce and develop formal mechanisms to encode meaning in natural language. We will deeply explore the topics of predication, definiteness, quantification, and semantic modeling. Mastery of these topics can be applied to many other semantic phenomena. By the end students will be able to: understand and evaluate scholarly literature in semantics; approach problems in natural language from the perspective of a formal semanticist; understand and describe the role of semantics in generative approaches to language; and produce novel work in semantics.

LING503 - Phonological Theories 503-3 Phonological Theories. An examination of the development of phonological theories from the 19th century up to the present. Relationships among various theories and insights into language structures that arise from them are considered. Data analysis within the perspectives of the different theories. Not open to those who have taken LING 405. Prerequisite: LING 505 or consent of department.

LING505 - Professional Study Linguistics 505-3 The Professional Study of Linguistics. Basic concepts and methods of general linguistics. Fundamentals of the nature, structure and functioning of language. Data analysis and problem solving. Introduction to professional standards and resources available for linguistic research. Course satisfies introduction to linguistics requirement.

LING506 - Historical Linguistics 506-3 Historical Linguistics. Theories and methods in the study of the history and prehistory of languages and language families. Prerequisite: LING 505, LING 503 and LING 508 or consent of department.

LING508 - Syntactic Theory 508-3 Syntactic Theory. An examination of the major concepts and issues in generative grammar. Data from diverse languages will be examined. Students will be presented with problems in syntax to solve. They will also carry out an individual project in syntactic analysis. Not open to those who have taken LING 408. Prerequisite: LING 505 or consent of department.

LING510 - History of Linguistics 510-3 History of Linguistics. The history of linguistic inquiry from classical times to the present. Prerequisite: one previous course in linguistics or consent of instructor.

LING531 - Pedagogical Grammar 531-3 Pedagogical Grammar. Explores the relationships among language structure, learning and teaching in order to understand the role of grammar in TESOL. Makes students more aware of the way the English language works, the kinds of language that ESL learners produce and why they proceed through certain stages, and understand the role and effects of grammatical consciousness-raising on the development of ESL. Not open to those who have taken LING 431. Prerequisite: LING 570 or consent of department.

LING540 - Studies in Applied Linguistics 540-3 to 6 (3 per topic) Studies in Applied Linguistics. Selected topics in applied linguistics. May be repeated as topics vary to a total of six hours of credit with consent of department. Prerequisite: LING 505 or consent of department.

LING541 - Second Language Acquisition 541-3 Introduction to Second Language Acquisition. (Same as PSYC 577) Introduction to key concepts and major theoretical and methodological issues in second

language acquisition. Major developments in SLA in phonology, morphology, lexis, syntax, semantics and discourse and provides students with hands-on experience in describing and accounting for second language data. Opportunity to design and implement a data-based SLA study in an area of interest to students. Prerequisite: LING 505 or consent of instructor.

LING542 - Adv Seminar Sec Lang Acqsn 542-3 Advanced Seminar in Second Language Acquisition. Research seminar in second language acquisition on selected topics such as universal grammar in SLA, language transfer, variation in SLA, second language learnability, etc. Prerequisite: LING 541 or consent of instructor.

LING543 - Bilingualism 543-3 Bilingualism. (Same as PSYC 578) A comprehensive introduction to the study of bilingualism. Course will examine the linguistic, psycholinguistic, sociolinguistic and educational aspects of bilingualism, particularly as pertaining to the care and education of bilingual children. Prerequisite: LING 505 or consent of instructor.

LING544 - Discourse Analysis 544-3 Discourse Analysis. (Same as ANTH 544) Survey of major approaches to the analysis of spoken or written discourse including speech act theory, pragmatics, interactional sociolinguistics, ethnography of communication, conversation analysis, variation analysis, and critical discourse analysis. Prerequisite: LING 505 or consent of department.

LING545 - Language, Gender, Sexuality 545-3 Language, Gender and Sexuality: Anthropological Approaches. (Same as ANTH 546, WGSS 546) This course examines the study of language in society with a particular focus on how linguistic practices are part of the construction of gender and sexuality identities, ideologies, social categories and discourses. Anthropological theories applied to the study of language, gender and sexuality will be covered along with a variety of methodological approaches.

LING546 - Conversatn Analysis:Pragmatics 546-3 Conversation Analysis: Pragmatics. (Same as CMST 546) Study of the pragmatics of everyday conversation: sequential organization, topical coherence, speech act rules and functions, contextual frames and background understandings. Emphasis on observational research methods and analysis of original data. Special approval needed from the instructor.

LING548 - Linguistic Anth of Education 548-3 The Linguistic Anthropology of Education. (Same as ANTH 548) This course examines the role of language in education through a critical anthropological lens, examining educational institutions across cultures and times. Topics to be covered include the teaching of literacy, language policies and ideologies in education, the linguistic construction of identities in school settings (including national, ethnic, gender, sexuality, age, religious and social class identities) and modes of intervention to improve educational endeavors. Ethnographic studies of education in a variety of national, cultural and linguistic contexts will be covered, as well as other discourse analysis approaches to the study of educational processes and institutions. The course is designed to bring together a wide range of material of interest to graduate students in anthropology, linguistics, education and other related fields.

LING549 - Research Methods 549-3 Research Methods in Linguistics and TESOL. This course examines basic concepts and principles of quantitative and qualitative methods in Linguistics and TESOL. It prepares students to critically read and understand related research as well as design and carry out their own research projects. It includes analyses of research articles, writing literature reviews, making informed decisions about appropriate methodology and data analyses procedures. Prerequisite: LING 505 or consent of department.

LING550A - Sem-Syntax & Semantics 550A-3 to 6 Seminar in Theoretical Linguistics. Guided advanced research in syntax and semantics. May be taken only once. Special approval needed from the department.

LING550B - Seminar - Phonology 550B-3 to 6 Seminar in Theoretical Linguistics. Guided advanced research in phonology. May be taken only once each. Special approval needed from the department.

LING550C - Seminar-Sociolinguistics 550C-3 to 6 Seminar in Theoretical Linguistics. Guided advanced research in sociolinguistics. May be taken only once each. Special approval needed from the department.

LING550D - Seminar-Selected Topics 550D-3 to 6 Seminar in Theoretical Linguistics. Guided advanced research in selected topics. May be repeated as topics vary. Special approval needed from the department.

LING551 - Pragmatics 551-3 Pragmatics. (Same as ANTH 551) An investigation of language use in context; this incorporates both social and psychological aspects of language use. Topics to be covered in this course include speech acts; implicature; conversation analysis; and the acquisition of communicative competence by both first and second language learners. Prerequisite: LING 505 or consent of department.

LING552 - Field Methods in Linguistics 552-3 Field Methods in Linguistics. At a time when minority languages are dwindling and becoming extinct, language documentation is more important than ever. This course has two pedagogical goals, related to the documentation of understudied languages. The first goal is to train students on the methods of eliciting and evaluating data to construct a detailed linguistic description and analysis of an unknown language, essentially from scratch, by working with a native speaker of the language. The second goal is for students to discover specific details of the structure of the language under investigation and document them for posterity.

LING553 - Advanced Phonology 553-3 Advanced Phonology. Emphasis is on current work in phonology, its impact on phonological theory, and application of theory to data, and implications for current work. Prerequisite: LING 503 or consent of department.

LING558 - Advanced Syntax 558-3 Advanced Syntax. This course focuses on the study of current trends in generative grammar, building on Government and Binding and moving into Minimalism. Part of the class will be devoted to the study of original works on special topics. A major requirement of this class is a term project investigating the syntax of a language of the student's choosing. Prerequisite: LING 508 or consent of department.

LING570 - TESOL Methods/Materials 570-3 Methods and Materials in TESOL. Requirement for Illinois ESL/Bilingual Approval. Methods/materials to teach ESL/EFL in the United States (K-adult) and abroad. Promotes eclecticism through reflective practice; overview of methods from early grammar translation to cognitive and communicative, integrated skills, technology and content-based approaches. Lecture, readings, discussion, demonstration, materials review, lesson planning, micro-teaching.

LING573 - Intro to CALL 573-3 Introduction to Computer-Assisted Language Learning. (Same as FL 437) This hands-on course introduces essential concepts and skills for applying technology to language learning and instruction. Topics include online quizzes and activities, creating and editing multimedia objects for use in instructional materials, social networking, Web resources, evaluating commercial materials, digital storytelling and hypermedia. New developments in CALL are introduced as the state of the art progresses. Not open to those who have taken LING 473.

LING574 - CESL Teaching Methods 574-3 CESL Teaching Methods. Introduces new CESL teaching assistants to teaching methodologies and principles within the CESL context, following CESL's curriculum and classroom practices. Familiarizes students with pedagogical strategies, theories of language instruction, materials design, curriculum development, error correction and assessment, classroom management, reflective teaching, and professionalism. Required of first time CESL teaching assistants.

LING580 - Teaching English Abroad 580-3 to 6 Seminar in Special Topics in TESOL-Teaching English Abroad. Selected topics in special areas of teaching English to speakers of other languages. May be repeated as topics vary. Prerequisite: LING 570 or consent of instructor.

LING582 - Course Design for TESOL 582-3 Course Design for TESOL. A review of issues and procedures in the design and implementation of courses for teaching English to speakers of other languages. Particular attention is given to recent developments such as content-based instruction. All major course components such as setting of objectives, syllabus design, content specification and evaluation are considered. In addition, resources available for addressing these issues will be discussed. Prerequisite: LING 570 or consent of instructor.

LING583 - TESOL Practicum 583-3 TESOL Practicum. Class observation and supervised teaching of English to speakers of other languages; meets concurrently with Linguistics 454: Observation

and Practice in TESOL and Linguistics 100: Instruction in ESL. Prerequisite: LING 570 or consent of department.

LING584 - Teach Composition in Sec Lang 584-3 Teaching Composition in a Second Language. Analysis of current theories of composition in a second language, research on the nature, process, and applications of research for the teaching of writing in a second language. Prerequisite: LING 570 or consent of instructor.

LING585 - L2 Listen and Speak 585-3 Teaching Listening and Speaking in a Second Language. An introduction to current theories, principles, and techniques for teaching second language listening and speaking skills. Students will gain practical experience in developing meaningful listening and speaking activities/materials. Prerequisite: LING 570 with a B or better or consent of instructor.

LING586 - English for Specific Purposes 586-3 English for Specific Purposes. A course designed to familiarize students with key components of English language courses designed for speakers of other languages with specific needs or in well-defined settings. Case studies and sample courses are reviewed and students develop individual projects related to a content area or course component of their choice, e.g., needs assessment, syllabus design, materials development or teacher training. Prerequisite: LING 570 or consent of instructor.

LING587 - Teach Reading in Second Lang 587-3 Teaching Reading in a Second Language. Analysis of theories of reading in a second language (L2) and research into the nature of L2 reading. Observation and practice in developing L2 reading materials and teaching techniques under supervision. Not open to those who have taken LING 487. Prerequisite: LING 570 or consent of instructor.

LING588 - Intercultural Communication 588-3 Intercultural Communication. Advances knowledge and understanding of theory, practice, and research in intercultural communication, including the effects of cultural identities and cross-cultural experiences on language, perception and world view. Implications for language learning and teaching are also explored. Prerequisite: LING 505 or consent of department.

LING589 - Teaching Vocabulary in Sec Lan 589-3 Teaching Vocabulary in a Second Language. The course integrates theory and practice in teaching second language vocabulary. It offers an introduction to concordances and collocations and their use in materials development. Prerequisite: LING 570 or consent of instructor.

LING592 - Advanced CALL 592-3 Advanced Computer-Assisted Language Learning. (Same as FL 592) This hands-on course builds on LING 573 (Introduction to Computer-Assisted Language Learning) and covers language learning in virtual worlds, creating a presence on the Web, course management systems, developing apps for mobile devices, making instructional videos as well as hypermedia learning units. New developments in CALL are introduced as the state of the art progresses. Prerequisite: LING 573 with a grade of C or better, or consent of instructor.

LING593 - Research in Linguistics 593-1 to 4 Research in Linguistics. Individual research under graduate faculty guidance. Special approval needed from the instructor.

LING597 - Readings in Linguistics 597-1 to 8 Readings in Linguistics. Individual readings in linguistics undergraduate faculty guidance. Special approval needed from the department.

LING599 - Thesis 599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree. Special approval needed from the department.

LING601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Linguistics Faculty

Baertsch, Karen S., Associate Professor, Ph.D., Indiana University, 2002.

Brutten, Sheila R., Associate Professor, Emerita, M.A., Southern Illinois University Carbondale, 1965.
Carstens, Vicki, Professor and Chair, Ph.D., UCLA, 1991.
Crow, Bryan Kelso, Associate Professor, Ph.D., University of Iowa, 1982.
Dotson, John E., Professor, Emeritus, Ph.D., Johns Hopkins University, 1969.
Friedenberg, Joan, Professor, Emerita, Ph.D., University of Illinois, 1979.
Gilbert, Glenn G., Professor, Emeritus, Ph.D., Harvard University, 1963.
Halliday, Laura J., Senior Lecturer, Ph.D., Southern Illinois University Carbondale, 2005.
Kim, Alan Hyun-Oak, Professor, Ph.D., University of Southern California, 1985.
Lakshmanan, Usha, Professor, Ph.D., University of Michigan, 1989.
Martin, Katherine I., Assistant Professor, Ph.D., University of Pittsburgh, 2015.
McCrocklin, Shannon M., Assistant Professor, Ph.D., Iowa State University, 2014.
Montavon, Mary V., Lecturer, Emerita, Ph.D., University of Illinois, 2003.
Perkins, Allen Kyle, Professor, Emeritus, Ph.D., University of Michigan at Ann Arbor, 1976.
Punske, Jeffrey, Assistant Professor, Ph.D., University of Arizona, 2012.
Rodriguez-Ordenez, Itxaso, Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign, 2016.

Latino and Latin American Studies

The Latino and Latin American Studies minor is interdisciplinary, designed to provide undergraduates with an enhanced understanding of the culture, history, language, literature, and arts of both Latinos in the United States and the people of Latin America. The minor consists of a minimum of 15 hours that are to be selected from the university's offerings on these topics and organized to reflect each individual student's interests. Through coursework in Latino and Latin American Studies, students may prepare themselves for careers in teaching, government, the media, health care, business, law, and the arts, among others. The requirements for the Latino and Latin American Studies minor are listed below.

LATINO AND LATIN AMERICAN STUDIES MINOR

There are no language requirements or other prerequisites for the minor. Latino and Latin American Studies courses do not require a knowledge of Spanish or other foreign languages. However, a familiarity with Spanish (or any second language) is always an asset. CoLA majors are strongly encouraged to use introductory Spanish language courses in order to fulfill the college-wide foreign language requirement.

Students who have proficiency in other languages such as Portuguese or an indigenous Latin American language may consult with the Program Coordinator about having them count for the LALAS minor.

Electives can be chosen from the following (note that some have prerequisites or restrictions): AFR 360; ANTH 204, ANTH 205, ANTH 206, ANTH 302, ANTH 310C, ANTH 310E, ANTH 310I, ANTH 416, ANTH 420, ANTH 430B, ANTH 430F; CCJ 203; ECON 419; ENGL 205, ENGL 446; HIST 361, HIST 365, HIST 370A, HIST 370B, HIST 407, HIST 470; LING 416; PHIL 211; POLS 215, POLS 366; PSYC 223; SOC 215, SOC 438, SPAN 304, SPAN 310, SPAN 370B, SPAN 434, SPAN 451, SPAN 461.

Mathematics

Opportunities for mathematics majors have expanded greatly in recent years. Mathematics majors become actuaries, statisticians, mathematical computer scientists, applied mathematicians, operations research analysts and mathematical researchers. Mathematics is growing and changing and holds fascinating challenges for inquiring minds.

As an undergraduate mathematics major at Southern Illinois University Carbondale, you may work toward a Bachelor of Science degree in the College of Science or the College of Education and Human

Services, or a Bachelor of Arts degree in the College of Liberal Arts. The classes in the mathematics major curriculum are small and are taught by senior faculty members. A strong support system of college and departmental advisement is available to you at SIU throughout the year.

A student planning for employment with a bachelor's degree should consider a minor or a second major in some field in which mathematics is applied. Many students earn a double major in mathematics and computer science. All of the bachelor's degree programs in mathematics, including the Bachelor of Science degree in the College of Education and Human Services, have sufficient flexibility to allow you to prepare for alternate career possibilities.

To prepare to major in mathematics at SIU, you should have a solid high school preparation in algebra, geometry in two and three dimensions, and trigonometry, including a substantial study of functions and graphing. Students transferring to SIU after two years at a community college should have completed the calculus sequence, linear algebra and a course in a high-level computer programming language.

As a mathematics major at SIUC, you will meet with a Department of Mathematics advisor at least once each semester for planning and departmental approval of courses appropriate to your goals and interests.

A grade of C or better is required in every mathematics course used to satisfy departmental requirements. A student cannot repeat a course or its equivalent in which a grade of B or better was earned without the consent of the department. A math major is required to obtain the permission of the department for a second repeat (third attempt) of a course that is required or elective for the major.

Double majors in mathematics and related fields

Special provisions are made for students to earn a double major in mathematics and a field in which mathematics is extensively applied. The courses MATH 447, MATH 449, MATH 471, MATH 472, and MATH 475 carry credit in both mathematics and computer science. See Bachelor of Science Degree, College of Science for specific requirements in mathematics for students who also earn a major or minor in computer science.

For students pursuing a double major in math and engineering, physics, or chemistry, the mathematics requirements are MATH 150 or MATH 151, MATH 221, MATH 250, MATH 251, MATH 305 and five additional mathematics courses numbered above 300, including at least three courses above 400, and including two of the three areas of algebra, analysis, probability and statistics. A mathematics department advisor must approve the courses.

Students majoring in business may obtain a second major in mathematics. The requirements are MATH 150 or MATH 151, MATH 221, MATH 250, MATH 251, and five approved mathematics courses at the 300-400 level, of which at least four are at the 400-level. Recommended courses for this program include MATH 471, MATH 472, MATH 475, MATH 483, MATH 484.

Option in Statistics

A student majoring in mathematics in the College of Science may choose to concentrate in statistics. For this option, the 300- and 400-level course requirements include: MATH 302; either MATH 417 or MATH 421; either MATH 305 or MATH 472; one of MATH 352, MATH 450, or MATH 455; MATH 480; MATH 483; at least two of MATH 473, MATH 481, MATH 484, MATH 485 and one additional approved upper division mathematics course

Bachelor of Science Degree in Mathematics, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Science Academic Requirements	12

Degree Requirements	Credit Hours
Biological Sciences: six hours (not University Core Curriculum courses) (Three hours included in the UCC Life Science hours)	3
Mathematics: completed with the major Physical Sciences: six hours (not University Core Curriculum courses) (Three hours included in the UCC Life Science hours)	3
Supportive Skills: a two-semester sequence in a foreign language, or three years of one foreign language in high school with no grade lower than C	6
Requirements for Major in Mathematics	42
MATH 150 or MATH 151, MATH 221, MATH 250, MATH 251 (Three hours included in UCC mathematics hours)	11
CS 202 or approved substitute	4
MATH 302	3
At least one course from each of the following groups	12
(One group may be waived for students with a minor in CS) Group A: Algebra/Discrete Math/ Linear Algebra: MATH 319, MATH 349, MATH 419, MATH 421 Group B: Analysis: MATH 352, MATH 450, MATH 455 At least two, from different groups, of the following: Group C: Applied Math/ Numerical Analysis: MATH 305, MATH 471, MATH 472, MATH 475 Group D: Probability/Statistics: MATH 380, MATH 480, MATH 483 Group E: GEO 335, GEO 433	
Four additional courses in mathematics numbered above MATH 299 (excluding MATH 300I, MATH 311A, MATH 311B, MATH 321, MATH 322, MATH 388, MATH 389, MATH 411, MATH 412)	12
A minimum of five 400-level math courses must be taken. Each student's program must be approved by a mathematics department advisor. Courses taken Pass/Fail will not count toward the major.	
Electives	27
Total	120
The student must work with the Advisement Office to ensure that SIUC'S 42 Senior-Hours requirement is met by appropriate choices of core, college, major and elective coursework.	

Bachelor of Arts Degree in Mathematics, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	12-15
English Composition (one of ENGL 290, ENGL 291, ENGL 390, ENGL 391, ENGL 392)	3
Foreign Language	6
International Coursework: 2 courses from the Global Studies Minor, Section A. Three hours MAY possibly be used for both International and UCC requirements	3-6
Requirements for a Major in Mathematics ¹	42
MATH 150 or MATH 151, MATH 221, MATH 250, MATH 251	11
(Three hours are accounted for in UCC) CS 202 or approved substitute	4
MATH 302	3
At least one course from each of the following groups:	12
(One group may be waived for students who have a minor in Computer Science) Group A: Algebra/Discrete Math/Linear Algebra: MATH 319, MATH 349, MATH 421 Group B: Analysis: MATH 352, MATH 450, MATH 455 Group C: Applied Math/Numerical Analysis: MATH 305, MATH 471, MATH 472, MATH 475 Group D: Probability/Statistics: MATH 380, MATH 480, MATH 483	
Four additional courses in mathematics numbered above MATH 299 (excluding MATH 300I, MATH 311A-B, MATH 321, MATH 322, MATH 388, MATH 389, MATH 411, MATH 412)	12
Secondary Concentration Requirements ²	6-9
6-9 hours approved by the Mathematics Department in one of the following areas: engineering, computer science, physics, economics, business & administration. A minor in any department of the College of Liberal Arts or College of Science may be substituted for this requirement.	
Electives to make a total of 120 hours	15-20

Degree Requirements	Credit Hours
Total	120

Each student's program must include at least 5 mathematics courses at the 400 level. Courses taken Pass/Fail will not count toward the major. Mathematics majors are required to meet with a departmental advisor for approval of their courses prior to registering each semester.

1 Three hours of mathematics course work are accounted for in the 39-hour Core Curriculum requirement.

2 Secondary Concentration Requirement (Choose one of the following options) i) PHYSICS: six hrs from PHYS 205A, PHYS 205B, or 300-level courses with math prerequisites. ii) ENGINEERING: six hrs of ENGR courses with math prerequisites numbered above 222. iii) COMPUTER SCIENCE: CS 215, CS 220, and one of CS 306 or CS 311. iv) ECONOMICS: six hrs from the following, including 3 hours above the 200 level: ECON 240, ECON 241, ECON 340, ECON 341, ECON 440, ECON 441, ECON 465. v) BUSINESS: ACCT 220 & ACCT 230 plus one additional course chosen from ECON 240, ECON 241, MATH 139. vi) CHEMISTRY: CHEM 200 and CHEM 210, plus one advanced CHEM with a math prerequisite. vii) ANY MINOR in the College of Science or the College of Liberal Arts.

Specialization in Actuarial Mathematics

Students pursuing the Bachelor of Arts degree with a major in mathematics in the College of Liberal Arts may choose to specialize in Actuarial Mathematics. Actuaries put a price on risk, and Actuaries are often ranked as a top ten job with high pay. The Actuarial program at Southern Illinois University Carbondale provides course work in Mathematics to prepare students for work as Actuaries. Students become Actuaries by taking three Validation by Educational Experience (VEE) course sequences and by passing professional examinations given by the society of Actuaries (SOA, see www.soa.org) and Casualty Actuarial Society (CAS, see www.casact.org). The professional exams cover probability, financial mathematics for investments including interest theory and financial derivatives, life contingencies: mathematics for life insurance, and loss models. More information about Actuaries and the professional exams can be found at (www.beanactuary.com).

Freshmen admitted to the program should have at least a 24 Math ACT score. Students can also enroll as Math majors and transfer to the Actuarial program after receiving a C or higher in MATH 250. The program offers preparation for four Actuarial exams and for the three VEE course sequences. Students are required to complete three VEE course sequences and are encouraged to pass Exam P/1, FM/2 and either MLC/3L or C/4.

Specialization in Actuarial Mathematics, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
To include MATH 150 or MATH 151, ECON 240, MATH 300I and FL.	
College of Liberal Arts Academic Requirements	12-15
English Composition (one of ENGL 290, ENGL 291, ENGL 390, ENGL 391, ENGL 392)	3

Degree Requirements	Credit Hours
One approved writing intensive course (MATH 302) (accounted for in the major)	
Foreign Language	6
International Coursework: 2 courses from the Global Studies Minor, Section A.	
Three hours MAY possibly be used for both International and UCC requirements.	3-6
Requirements for Actuarial Specialization	47
(MATH 150), MATH 221, MATH 250, MATH 251 (Three hours included in UCC mathematics hours)	11
CS 202	4
MATH 302 and MATH 483	7
At least one course from each of the following groups	9
Group A: Algebra/Discrete Math/Linear Algebra: MATH 319, MATH 349, MATH 421	
Group B: Analysis: MATH 352, MATH 450, MATH 455	
Group C: Applied Math/Numerical Analysis: MATH 305, MATH 471, MATH 472, MATH 475	
MATH 400, MATH 474, and MATH 484	10
Either MATH 401 and MATH 402 or MATH 403 and MATH 404	6
Additional courses required for VEE examinations:	
ECON 240 (if not already included in Core) and ECON 241	6
FIN 330 and FIN 361	6
Accounting courses required as prerequisites for FIN 330	
ACCT 220, ACCT 230	9
Electives if needed to make a total of 120 hours	4-7
Total	120

Bachelor of Science Degree in Mathematics, College of Education and Human Services

Degree Requirements	Credit Hours
University Core Curriculum Requirements to include ENGL 101 & ENGL 102, PSYC 102, MATH 300I, EDUC 311, EDUC 314	39
Requirements for major in Mathematics	46
Content Courses	40
MATH 150 or MATH 151, MATH 221, MATH 250, and MATH 251 or MATH 305 (Three hours included in UCC mathematics hours)	11
CS 202 or approved substitute	4
MATH 302, MATH 319, MATH 335, MATH 349, MATH 352, MATH 433, MATH 483	19
At least two additional approved 400-level mathematics courses excluding MATH 411, MATH 412	6
Methods Course, MATH 311A, MATH 311B	6
Professional Education and Licensure Requirements	24
EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, EDUC 401A Other requirements for licensure CI 360	3
Electives to make 120 hours	8
Total	120

Admission into the Teacher Education Program requires a 2.5 average in MATH 150 or MATH 151, MATH 221, MATH 250; and MATH 251 or MATH 305 in addition to College of Education and Human Services requirements for admission to the TEP.

Retention in the Teacher Education Program and approval for student teaching requires a 2.75 average in the major and departmental approval.

Mathematics majors are required to meet with a departmental advisor for approval of their courses prior to registering each semester.

Concentration in Mathematics for Elementary Education

Consult with College of Education and Human Services and with Mathematics advisors about the latest requirements.

Mathematics Minor

A non-teaching minor consists of MATH 150 or MATH 151 and 12 hours of mathematics courses at the 200 level or above, including at least three hours at the 400 level (excluding MATH 220, MATH 257, MATH 282, MATH 300I, MATH 311A, MATH 311B, MATH 321, MATH 322, MATH 388, MATH 389, MATH 411, MATH 412). All courses used for the minor must be completed with a grade of C or better. The 400-level mathematics courses must be taken at SIU Carbondale.

The departmental advisor must approve the student's minor program.

Additional Educator Endorsements in Mathematics

Students pursuing a teaching license in another discipline and interested in adding an endorsement in mathematics should see a mathematics department advisor to obtain a list of specific requirements.

Honors

MATH 395 and MATH 495 are used for individual honors work for upper level undergraduates in mathematics. Concurrent participation in the University Honors Program is encouraged.

Placement

In addition to having taken the prerequisite mathematics courses, students are required to present a satisfactory placement score as a condition for registration in mathematics courses. Contact the Department of Mathematics for current information regarding placement.

Mathematics Courses

MATH101 - Intro to Contemporary Math 101-3 Introduction to Contemporary Mathematics. (University Core Curriculum Course) [IAI Course: M1 904] Elementary mathematical principles as they relate to a variety of applications in contemporary society. Exponential growth, probability, geometric ideas and other topics. This course does not count towards the major in mathematics. Prerequisite: MATH 107 with a grade of C or better or high school Geometry and Algebra 2 with a grade of C or better, and satisfactory placement score. \$96 fee will cover student access to mylabsplus. Platform is used for assessment and online access to learning aids and e-textbook.

MATH105 - College Algebra for Teachers 105-3 College Algebra and Mathematical Modeling for Teachers. A course in college algebra designed for the pedagogical and content needs of K-8 teachers. Equations and inequalities involving linear, polynomial, rational, absolute value, exponential and logarithmic functions, and systems of linear equations; the algebra of functions (polynomials, rational, exponential, logarithmic), graphing functions; domain and range. Conic sections. Modeling and solving real-world problems and situations. Use of technology as appropriate to interpret data and create mathematical models. Core Standards Mathematical Practices will be infused throughout. No credit may be earned for MATH 105 if there is prior credit in MATH 106, 108 or 111. Prerequisite: Satisfactory placement score OR MATH 220 with a grade of C or better. Digital Course Materials Fee: \$93.

MATH106 - College Algebra Enhanced 106-3 College Algebra Enhanced. (University Core Curriculum) The course leads students through an intensive review of foundational algebra concepts followed by a careful study of functions (polynomial, rational, exponential, logarithmic), graphing, solving equations including systems. Two lecture and three lab hours per week. Credit is given for only one of MATH 106, 108, 111. Prerequisite: Three years of college preparatory mathematics including Algebra I, Geometry and Algebra II AND satisfactory placement score. Digital Course Materials and CAI (Computer Aided Instruction) Fee: \$183.

MATH107 - Intermediate Algebra 107-3 Intermediate Algebra. Properties & operations of real numbers. Polynomials, factoring, algebraic fractions, exponents, roots, and radicals. First and second-degree

equations and inequalities. Functions, graphing, systems of equations and inequalities. Exponential and logarithmic functions. Does not satisfy the University Core Curriculum mathematics requirement and does not count toward the hours required for graduation. Prerequisite: satisfactory placement score. \$96 fee will cover student access to mylabsplus. Platform is used for assessment and online access to learning aids and e-textbook.

MATH108 - College Algebra 108-3 College Algebra. (Advanced University Core Curriculum Course) The algebra of functions (polynomials, rational, exponential, logarithmic), graphing, conic sections, solving equations including systems. Not open to students with prior credit in MATH 106 or MATH 111. Prerequisite: Three years of college preparatory mathematics including Algebra I, Geometry and Algebra II AND satisfactory placement score. \$156 course fee will cover student access to Mylabsplus. Platform is used for assessment and online access to learning aids and e-textbook.

MATH109 - Trig & Analytic Geometry 109-3 Trigonometry and Analytic Geometry. (Advanced University Core Curriculum Course) Trigonometric and inverse trigonometric functions, complex numbers, conic sections, polar coordinates. Credit is not given for both MATH 109 and 111. Prerequisites: MATH 108 or MATH 106 or equivalent, with C or better. New students must present satisfactory placement scores.

MATH110 - Non-Technical Calculus 110-3 Non-Technical Calculus. (University Core Curriculum) The elements of differentiation and integration. The emphasis is on the concepts and the power of the calculus rather than on technique. It is intended to provide an introduction to calculus for non-technical students. Does not count towards the major in mathematics. No credit hours may be applied to fulfillment of any degree requirements if there is prior credit in Mathematics 140, 141, 150, or 151. Prerequisite: 3 years of college preparatory mathematics including algebra I, algebra II and geometry with C or better. Students must present satisfactory placement scores or obtain the permission of the Department of Mathematics.

MATH111 - Precalculus 111-4 Precalculus. (Advanced University Core Curriculum Course) Intensive review of college algebra and trigonometry necessary for Calculus I. Algebra of rational and transcendental functions, graphing, trigonometric identities, laws of sines and cosines, conics, complex numbers, polar coordinates. Not open to students with credit in 106, 108 or 109. Prerequisites: High school advanced algebra and trigonometry with at least C and satisfactory placement score. Course Materials included ED Fee: \$96.

MATH120 - Math for Elem School I 120-3 Mathematics Content and Methods for Elementary School I. (Same as CI 120) Modern approaches to mathematics instruction for the elementary grades. Mathematics content includes problem solving, intuitive set theory, development of whole numbers, integers and rational numbers and the fundamental arithmetic operations. Place value. Prime numbers and divisibility properties. Computation includes students' informal mathematics, mental computation and estimation, algorithms and the appropriate use of calculators. Emphasis is placed throughout on reasoning, multiple representations of mathematical concepts, making connections and communication. Three hours lecture/laboratory per week. Prerequisite: Three years of college preparatory mathematics including Algebra I, Algebra II and Geometry and satisfactory placement score.

MATH125 - Tech Math with Applications 125-4 Technical Mathematics with Applications. (Advanced University Core Curriculum course) Emphasizes the applications of algebra and trigonometry in technical fields. Topics in algebra include functions and graphs, systems of linear equations, quadratic equations, higher degree equations and variation. Topics in trigonometry include the trigonometric functions, laws of sines and cosines, complex numbers, exponential and logarithmic functions. Meets University Core Curriculum requirement in mathematics for Applied Sciences and Arts students. Prerequisite: Mathematics 107 or two years of high school algebra or equivalent, with a grade of C or better. Enrollment restricted to students in the College of Applied Sciences and Arts or permission of department. Course Materials included ED Fee: \$96.

MATH139 - Finite Mathematics 139-3 Finite Mathematics. (Advanced University Core Curriculum Course) Set concepts and operations, combinations, permutations, elementary probability theory including Bayes Formula, linear systems of equations, matrix algebra, row reduction, introduction to linear programming and simplex method. This course does not count toward the major in mathematics.

Prerequisite: MATH 108 with grade of C or better or satisfactory placement score. Satisfies UCC Mathematics in lieu of 110 or 101.

MATH140 - Short Course in Calculus 140-4 Short Course in Calculus. (Advanced University Core Curriculum Course) Techniques of differentiation, increasing and decreasing functions, curve sketching, max-min problems in business and social science; partial derivatives; LaGrange multipliers; elementary integration techniques. Not open to students with prior credit in 141, 150, or 151. Does not count toward the major in mathematics. Prerequisite: MATH 108 with grade of C or better or satisfactory placement score. Satisfies University Core Curriculum Mathematics requirement in lieu of 110 or 101. \$92 fee will cover student access to mylabsplus. Platform is used for assessment and online access to learning aids and e-textbook.

MATH141 - Calculus for Biological Sci 141-4 Short Course in Calculus for Biological Sciences. (Advanced University Core Curriculum Course) [IAI Course: M1 900-0] Techniques of differentiation and integration. Applications to population and organism growth and other biological science problems. Not open to students with prior credit in 150, 151 or 140. Does not count toward the major in mathematics. Prerequisite: High school advanced algebra and trig or MATH 111 or 108 plus 109 with C or better, AND satisfactory placement score. Satisfies University Core Curriculum Mathematics requirement in lieu of 110 or 101.

MATH150 - Calculus I 150-4 Calculus I. (Advanced University Core Curriculum course) [IAI Course: MTH 901] [IAI Course: M1 900-1] Major concepts and techniques of single variable calculus with careful statements but few proofs. Differential and integral calculus of the elementary functions; analytic geometry. Only 2 hours credit toward graduation if there is prior credit in 140 or 141. Prerequisite: High school advanced algebra and trig or MATH 111 or 108 plus 109 with C or better, AND satisfactory placement score. Satisfies University Core Curriculum Mathematics requirements in lieu of 110 or 101.

MATH151 - Calculus I Enhanced 151-4 Calculus I Enhanced. (Advanced University Core Curriculum course) [IAI Course: MTH 901] This course leads students through an intensive review of foundational algebra and trigonometry concepts followed by a careful study of major concepts and techniques of single variable calculus with careful statements but few proofs. Differential and integral calculus of the elementary functions; analytic geometry. Only 2 hours credit toward graduation if there is prior credit in 140 or 141. Credit is given for only one of MATH 150, 151. Prerequisite: High school advanced algebra and trigonometry with at least C, AND satisfactory placement score. Additional Instruction Lab fee: \$90.

MATH220 - Math for Elem School II 220-3 Mathematics Content and Methods for the Elementary School II. (Advanced University Core Curriculum Course) (Same as CI 220) Modern approaches to mathematics instruction for the elementary grades. Mathematics content focuses on rational and irrational numbers. Ordering of numbers. Decimal representations. Percents. Ratio and Proportion. Perimeter and area concepts. Pythagorean Theorem. Concept of square root and nth root. Exponent notation. Elementary geometry. Triangles, quadrilaterals, polygons, angles associated with a polygon. Reflectional and rotational symmetry. Congruence and Similarity. Tessellations. Transformations: translations, rotations, reflections. Measurement of perimeter, area, surface area, volume, mass, temperature. Conversion of measurements. Emphasis is placed throughout on reasoning, multiple representations of mathematical concepts, making connections and communication. Prerequisite: MATH 120 or Curriculum and Instruction 120 or equivalent with a grade of C or better.

MATH221 - Intro to Linear Algebra 221-3 Introduction to Linear Algebra. Vector spaces, linear functions, systems of equations, dimensions, determinants, eigenvalues, quadratic forms. Prerequisite: MATH 150 or MATH 151 with a grade of C or better.

MATH250 - Calculus II 250-4 Calculus II. (Advanced University Core Curriculum Course) [IAI Course: MTH 902] [IAI Course: M1 900-2] Develops the techniques of single-variable calculus begun in Calculus I and extends the concepts of function, limit, derivative and integral to functions of more than one variable. The treatment is intuitive, as in Calculus I. Techniques of integration, introduction to multivariate calculus, elements of infinite series. Prerequisite: MATH 150 or MATH 151 with C or better. Satisfies University Core Curriculum Mathematics requirement in lieu of 110 or 101.

MATH251 - Calculus III 251-3 Calculus III. (Advanced University Core Curriculum Course) [IAI Course: M1 900-3] [IAI Course: MTH 903] Further topics in calculus. Definite integrals over solid regions, applications of partial derivatives, vectors and vector operations, derivatives of vector functions,

line integrals, Green's Theorem. Prerequisite: MATH 250 with C or better. Satisfies University Core Curriculum Mathematics requirements in lieu of 110 or 101.

MATH257 - Concurrent Work Experience 257-1 to 12 Concurrent Work Experience. As an instructional aide, the student will do tutoring under the direction of an established teacher and under the supervision of a representative of the Department of Mathematics. Special approval needed from the department. Mandatory Pass/Fail.

MATH282 - Intro to Statistics 282-3 Introduction to Statistics. (Advanced University Core Curriculum Course) Designed to introduce beginning students to basic concepts, techniques, and applications of statistics. Topics include the following: organization and display of data, measures of location and dispersion, elementary probability, statistical estimation, and parametric and nonparametric tests of hypotheses. Prerequisite: MATH 108 with C or better. Satisfies University Core Curriculum Mathematics requirement in lieu of 110 or 101.

MATH300I - History of Mathematics 300I-3 History of Mathematics. (University Core Curriculum) This course examines how diverse cultures and history from the ancient past to the present have shaped the development of mathematical thought and how developing mathematical ideas have influenced history and society. Particular attention will be given to the evolution of the concepts of number and space; the emergence and applications of calculus, probability theory, non-Euclidean geometries and technology; and to the changes in the concept of mathematical rigor. Does not count towards the mathematics requirements of the mathematics major. Open to all students. Prerequisite: MATH 150 or MATH 151.

MATH302 - Transition to Higher Math 302-3 Mathematical Communication and the Transition to Higher Mathematics. A course in communicating mathematical ideas with a special emphasis on reading, writing, and critiquing mathematical proofs. Topics covered include logic, proofs, set theory, relations, functions. Additional illustrative topics will be drawn from linear algebra, number theory, complex variables, and geometry. Prerequisite: MATH 221 and MATH 250 with a grade of C or better.

MATH305 - Intro Differential Equations 305-3 Introduction to Differential Equations. [IAI Course: MTH 912] First-order equations (including initial value problems, basic numerical methods, existence and uniqueness of solutions, separable equations, linear equations, exact equations, substitution methods and applications). Higher-order equations (including the general solution to homogeneous linear equations, linear independence, method of undetermined coefficients, the general solution to linear non-homogeneous equations, variation of parameters, and applications). Power series solutions. Partial differential equations and Fourier series. Prerequisite: MATH 250 with a grade of C or better.

MATH311A - Teaching Secondary Math I 311A-3 Teaching of Secondary Mathematics I. The nature and objectives of the standards-based secondary mathematics curriculum, particularly the means of introducing new ideas into the high school program. An important focus will be state and national teaching and learning standards and the use of technology. Heavy emphasis will be placed on development of formative and summative assessment measures and the use of such assessments in planning future instruction and remediation. For students preparing to be secondary mathematics teachers. Does not count toward a mathematics major in the Colleges of Liberal Arts or Science. Prerequisites: EDUC 313, EDUC 301 and MATH 349, MATH 335 or MATH 433, and MATH 352 with grades of C or better. Concurrent enrollment in MATH 335 or MATH 433 and MATH 352 is permissible.

MATH311B - Teaching Secondary Math II 311B-3 Teaching of Secondary Mathematics II. The nature and objectives of the standards-based secondary mathematics curriculum, particularly the means of introducing new ideas into the high school program. An important focus will be state and national teaching and learning standards and the use of technology. Emphasis in part II will be on the development of a complete curriculum, understanding the secondary curriculum as a dynamic system and the use of standardized testing to adjust curriculum and remediate students. Must be taken in A-B sequence. For students preparing to be secondary mathematics teachers. Does not count toward a mathematics major in the Colleges of Liberal Arts or Science. Prerequisite: MATH 311A with a grade of C or better and MATH 319. Concurrent enrollment in MATH 319 permissible.

MATH318 - Intro to Math Software 318-2 An Introduction to Mathematics Software. This course is an introduction to the use of Maple, a modern computer algebra system, as a computational and experimental tool in mathematics. The preparation of reports using text, graphics and mathematics is

emphasized. Topics will include: solving equations, plotting techniques, special packages, programming with Maple V. Prerequisite: MATH 150 or MATH 151 with B or better or MATH 250 with C or better.

MATH319 - Intro Abstract Algebra I 319-3 Introduction to Abstract Algebra I. Basic properties of groups and rings: Binary operations, groups, subgroups, permutations, cyclic groups, isomorphisms, Cayley's theorem, direct products, cosets, normal subgroups, factor groups, homomorphisms, rings, integral domains. Prerequisite: MATH 302 with C or better.

MATH321 - Math for Elem School III 321-3 Mathematics Content and Methods for the Elementary School III. (Same as CI 321) Modern approaches to mathematics instruction for the elementary grades. Mathematics content focuses on: straight-edge and compass constructions. Justification and proof of geometric properties. Three dimensional geometry. Coordinate geometry. Transformations expressed in coordinate notation. Analysis of linear relationships geometrically and algebraically. Modeling various "real-world" situations by linear equations and inequalities. Setting up and solving equations and inequalities. Exploration of statistical data. Representation of data, interpretation of data, misrepresentation of data. Introduction to the fundamental ideas of statistics; measures of spread and central tendency. Introduction to the fundamental concepts of probability. Counting techniques needed for calculating probabilities. Dependent and independent events. Conditional probability. Odds, expected value. Simulation. Emphasis is placed throughout on reasoning, multiple representations of mathematical concepts, making connections and communication. Prerequisite: MATH 220 or Curriculum and Instruction 220 or equivalent with a grade of C or better.

MATH322 - Math for Elem School IV 322-3 Mathematics Content and Methods for the Elementary School IV. (Same as CI 322) Modern approaches to mathematics instruction for the elementary grades. Mathematics content focuses on: algebra and algebraic thinking, geometry, relations and functions and their applications to real-life problems. Emphasis is placed throughout on reasoning, multiple representations of mathematical concepts, making connections and communication. Prerequisite: MATH 321 or Curriculum and Instruction 321 with a grade of C or better.

MATH335 - Concepts of Geometry 335-3 Concepts of Geometry. Introduction to the foundations of Euclidean and non-Euclidean geometries. Topics include synthetic approach (Euclidean geometry, axiomatic systems, constructions, proofs), symmetries (similarly, congruence and various transformations and their invariants), metric approach (distance), vector space approach (transformations and matrices, inner product), inversive geometry, projective geometry (art and math) and non-Euclidean geometries. Some applications in modern science, such as Relativity Theory, may also be covered. Historical background and connections with other parts of mathematics, science and culture are important components of this course. Prerequisite: MATH 250 with C or better, or MATH 302 with C or better or concurrent enrollment in MATH 302.

MATH349 - Intro to Discrete Math 349-3 Introduction to Discrete Mathematics. Numbers, sets, relations and functions; elementary enumeration; introduction to graph theory; logic, partially ordered sets and Boolean algebra; mathematical induction; recurrence relations. Prerequisite: MATH 221 and MATH 250 with C or better; Co-requisite: MATH 302 or prior completion of MATH 302.

MATH352 - Theory of Calculus 352-3 Theory of Calculus. An introduction to understanding and writing proofs in mathematical analysis, through a careful study of limits, continuity, the derivative, and the integral. Prerequisite: MATH 302 with C or better.

MATH380 - Elements of Probability 380-3 Elements of Probability. Probability as a mathematical system. Axioms, permutations and combinations, random variables, generating functions, limit theorems, and Monte Carlo procedure. Prerequisite: MATH 250 and Computer Science 202.

MATH388 - Int Math Content & Methods P-4 388-3 Integrated Math Content and Methods for Teachers (PreK-4th Grade). (Same as CI 388) This course is designed for early childhood and elementary school teachers, focusing on Pre-K through 4th grade mathematics content and methods. Math content covers the developmental progression of concepts and skills in counting and cardinality, numbers and operations in base-ten system, algebraic thinking, fractional reasoning, measurement and data, and geometry. Methods of math teaching are integrated with the delivery of math content. The course showcases standards-based mathematical practices including problem solving, mathematical modeling, communication and justification, use of tools and technology, assessment and interventions, diverse

learner support, supportive math environments, lesson planning, and interdisciplinary connections.
Prerequisite: C or better in CI/MATH 220 or equivalent.

MATH389 - Int Math Content/Methods 4-8 389-3 Integrated Math Content and Methods for Teachers (4th-8th Grade). (Same as CI 389) This course is designed for elementary school and middle school teachers, focusing on 4th-8th grade mathematics content and methods. Math content covers the developmental sequence of grade-appropriate mathematical concepts and skills in number systems, operations and algebraic thinking, ratios and proportional relationships, expressions and equations, functions and applications, measurement and data analysis, statistics and probability, and geometry. Methods of math teaching are integrated with the delivery of math content. The course showcases standards-based mathematical practices including problem solving, mathematical modeling, communication and justification, use of tools and technology, informative assessment, meeting the needs of diverse learners, building supportive math environments, lesson planning, and making interdisciplinary connections. Prerequisite: CI/MATH 388 with a minimum grade of C. Co-requisites: EDUC 319 and EDUC 302.

MATH390 - Topics in Contemporary Math 390-3 to 6 Topics in Contemporary Mathematics. Content will vary according to the instructor. The seminar will introduce students to new and developing areas of mathematics, such as Chaos, Fractals, Algorithms, Fourier Analysis, Difference Equations, etc. Prerequisite: intended for students who have completed Mathematics 150 or 151, 221, 250 and either 251 or 305.

MATH395 - Readings in Mathematics 395-1 to 6 Readings in Mathematics. Supervised reading in selected subjects. Prerequisite: 3.00 grade point average in mathematics. Special approval needed from the chair.

MATH400 - Interest Thry Fin Derivatives 400-4 Interest Theory and Financial Derivatives. This course examines financial mathematics and actuarial models for investments including interest, annuities, stocks, bonds, and mutual funds. There is an introduction to financial derivatives, options, and futures. Preparation for Exam FM/2. Prerequisite: MATH 250 (Calculus II) with C or better.

MATH401 - Life Contingencies I 401-3 Life Contingencies I. This course examines actuarial models for life insurance. Life contingency models include life insurance liability calculations, annuities, and credit risk. Basic properties of survival models and Poisson processes are covered. This course and MATH 402 prepare students for Exam MLC/3L. Prerequisite: MATH 483 with C or better.

MATH402 - Life Contingencies II 402-3 Life Contingencies II. This is a second course in actuarial models for life insurance including multiple contingencies, multiple survivals and claim frequency models. Basic properties of Markov Chains are covered. This course and MATH 401 prepare students for Exam MLC/3L. Prerequisites: MATH 221 and MATH 401 with C or better.

MATH403 - Loss Models I 403-3 Loss Models I. This course examines loss models including severity models, ruin models, and estimating and fitting the models. This course and MATH 404 prepare students for Exam C/4. Prerequisite: MATH 483 with C or better.

MATH404 - Loss Models II 404-3 Loss Models II. This is a second course in loss models including estimation and fitting of severity and ruin models, and credibility theory. This course and MATH 403 prepare students for Exam C/4. Prerequisite: MATH 403 with C or better.

MATH405 - Intermediate Diff Equations 405-3 Intermediate Differential Equations. This course features the study of several sets of differential equations with the aid of computers. The equations are actual applications in biology, chemistry, economics, engineering, finance, medicine and physics. Where possible, problems will be chosen to match student's interests. Students from these areas are particularly welcome. Basic theory of differential equations is cited as needed. Prerequisite: MATH 305 with C or better.

MATH406 - Linear Analysis 406-3 Linear Analysis. Introduction to function spaces and operators used in quantum mechanics, partial differential equations, etc. Topics include: discrete and continuous models for the vibrating string, separation of variables, eigenfunction analysis, inner product spaces; operators

on inner product spaces; the spectral theorem for Hermitian operators on finite dimensional spaces, the Courant-Fisher characterization. Prerequisite: MATH 221 and MATH 305 with C or better.

MATH407 - Partial Differential Equations 407-3 Partial Differential Equations. Solution methods for linear partial differential equations arising in engineering and science. Topics include: the heat equation, the wave equation, Laplace's equation, separation of variables, boundary and initial value problems, uniqueness via the energy methods, the maximum principle and characteristics. Solutions to the vibrating string and dissipation of heat in a bar will be discussed. Prerequisite: MATH 251 and MATH 305 with C or better.

MATH409 - Fourier Analysis 409-3 Fourier Analysis. Introduction to the theory, techniques and applications of Fourier analysis. Topics include: Fourier synthesis and analysis equations for periodic and aperiodic functions; convolution; the calculus of Fourier transforms, Fourier series of DFT's; operators and Fourier transforms; FFT and related algorithms; generalized functions such as Dirac's delta and others; selected applications. Prerequisite: MATH 221 and MATH 305 with C or better.

MATH411 - Math Topics for Teachers 411-1 to 6 Mathematical Topics for Teachers. Variety of short courses in mathematical ideas useful in curriculum enrichment in elementary and secondary mathematics. May be repeated as topics vary. Does not count toward a mathematics major.

MATH412 - Problem Solving Approach 412-3 Problem Solving Approaches to Basic Mathematical Skills. Content of basic skills at all levels of education and the development of these skills from elementary school through college; emphasis on problem solving and problem solving techniques; determination of student skills and proficiency level. Credit may not be applied toward degree requirements in mathematics. Prerequisite: MATH 321 or CI 321.

MATH417 - Applied Matrix Theory 417-3 Applied Matrix Theory. Selected applications of matrices to physics, chemistry and economics. This material is also useful for engineering and computer science. Topics include matrix representation of symmetry groups, non-negative matrices and the subsidy problem, location of eigenvalues. Prerequisite: MATH 221 with C or better.

MATH418 - Computer Algebra Systems 418-3 Computer Algebra Systems. This course presents modern computer algebra systems (CAS) as a research tool in mathematics. The use of a CAS in the preparation of reports, theses and dissertations will also be covered. Topics will include: solving differential equations with a CAS; plotting techniques with a CAS; symbolic packages for such areas as abstract algebra, number theory; and combinatorics; programming with a CAS; exporting results to TeX or word processing software; The AMS-LaTeX package. Restricted to graduate standing. Special approval needed from the instructor.

MATH419 - Intro Abstract Algebra II 419-3 Introduction to Abstract Algebra II. A detailed study of polynomial equations in one variable. Solvable groups and the Galois theory of field extensions are developed and applied to extensions of the quadratic formula, proving the impossibility of trisecting an angle with only a straight-edge and compass, and to the basic facts about finite fields as needed in coding theory and computer science. Prerequisite: MATH 319 with C or better.

MATH421 - Linear Algebra 421-3 Linear Algebra. The extension of basic linear algebra to arbitrary scalars. The theory and computation of Jordan forms of matrices (as needed e.g., for certain diffusion equations). Inner products, quadratic forms and Sylvester's Law of Inertia. Prerequisite: MATH 221 with C or better.

MATH425 - Intro to Number Theory 425-3 Introduction to Number Theory. Properties of integers, primes, divisibility, congruences, quadratic forms, diophantine equations, and other topics in number theory. Prerequisite: MATH 319 with C or better.

MATH430 - Intro to Topology 430-3 Introduction to Topology. Study of the real line and the plane, metric spaces, topological spaces, compactness, connectedness, continuity, products, quotients and fixed point theorems. This course will be particularly useful to students who intend to study analysis or applied mathematics. Prerequisite: MATH 352 with C or better.

MATH433 - Classical & Modern Geometry 433-3 Classical and Modern Geometry. Introduction to the foundations of Euclidean and non-Euclidean geometries. Topics include synthetic approach

(Euclidean geometry, axiomatic systems, constructions, proofs), symmetries (similarity, congruence and various transformations and their invariants), metric approach (distance), vector space approach (transformations and matrices, inner product), inversive geometry, projective geometry (art and math) and non-Euclidean geometries. Some applications in modern science, like Relativity Theory, may also be covered. Historical background and connections with other parts of mathematics, science and culture are important components of this course. Prerequisite: MATH 250 and MATH 302 with grades of C or better.

MATH435 - Elem Differential Geometry 435-3 Elementary Differential Geometry. Introduction to modern differential geometry through the study of curves in R^3 . Local curve theory with emphasis on the Serret-Frenet formulas; global curve theory including Fenchel's theorem; local surface theory motivated by curve theory; global surface theory including the Gauss-Bonnet theorem. Prerequisite: MATH 221 and MATH 251 with C or better.

MATH447 - Intro to Graph Theory 447-3 Introduction to Graph Theory. (Same as CS 447) Graph theory is an area of mathematics which is fundamental to future problems such as computer security, parallel processing, the structure of the World Wide Web, traffic flow and scheduling problems. It also plays an increasingly important role within computer science. Topics include: trees, coverings, planarity, colorability, digraphs, depth-first and breadth-first searches. Prerequisite: MATH 349 with C or better.

MATH449 - Intro to Combinatorics 449-3 Introduction to Combinatorics. (Same as CS 449) This course will introduce the student to various basic topics in combinatorics that are widely used throughout applicable mathematics. Possible topics include: elementary counting techniques, pigeonhole principle, multinomial principle, inclusion and exclusion, recurrence relations, generating functions, partitions, designs, graphs, finite geometry, codes and cryptography. Prerequisite: MATH 349 with C or better.

MATH450 - Methods of Advanced Calculus 450-3 Methods of Advanced Calculus. Multivariable calculus fundamental to continuum mechanics, differential geometry, electromagnetism, relativity, thermodynamics, etc. Includes: parametric curves and surfaces, inverse and implicit function theorems, contraction mapping and fixed point theorems, differentials, convergence of multivariate integrals, coordinate systems in space, Jacobians, surfaces, volumes and Green's, Gauss', and Stokes' theorems. Prerequisite: MATH 251 with C or better.

MATH452 - Introduction to Analysis 452-3 Introduction to Analysis. A rigorous development of one-variable calculus providing the tools necessary for understanding all other advanced courses in analysis. Topics include: sets, axioms for the real numbers, continuity, limits, differentiation, the Riemann integral, infinite sequences and series of functions. Additional topics may include areas such as Riemann-Stieltjes integration or the analysis of multivariable functions. Prerequisite: MATH 352 with C or better.

MATH455 - Complex Analysis 455-3 Complex Analysis with Applications. Analysis of differentiable functions of a single complex variable. Introduces mathematical techniques used to analyze problems in the sciences and engineering that are inherently two dimensional. Topics include: the complex plane, analytic functions, the Cauchy-Riemann equations, line integrals, the Cauchy integral formula, Taylor and Laurent series, the residue theorem, conformal mappings, applications. Prerequisite: MATH 251 with C or better.

MATH460 - Transformation Geometry 460-3 Transformation Geometry. Geometry viewed as the study of properties invariant under the action of a group. Topics include collineations, isometries, Frieze groups, Leonardo's Theorem, the classification of isometries of Euclidean and hyperbolic geometries. Recommended elective for secondary education majors in mathematics. Prerequisite: MATH 319 with C or better.

MATH471 - Optimization Techniques 471-3 Optimization Techniques. (Same as CS 471) Introduction to algorithms for finding extreme values of nonlinear multivariable functions with or without constraints. Topics include: convex sets and functions; the arithmetic-geometric mean inequality; Taylor's theorem for multivariable functions; positive definite, negative definite, and indefinite matrices; iterative methods for unconstrained optimization. Prerequisite: MATH 221 and MATH 250 with C or better.

MATH472 - Linear Programming 472-3 Linear Programming. (Same as CS 472) Introduction to finding extreme values of linear functionals subject to linear constraints. Topics include: recognition, formulation, and solution of real problems via the simplex algorithm; development of the simplex algorithm; artificial

variables; the dual problem and duality theorem; complementary slackness; sensitivity analysis; and selected applications of linear programming. Prerequisite: MATH 221 with C or better.

MATH473 - Reliability & Survival Models 473-3 Reliability and Survival Models. Introduction to statistical analysis of data on lifetime, including hazard functions and failure distributions; estimation and hypothesis testing in life testing experiments with complete as well as censored data. Prerequisite: MATH 480 or MATH 483 with C or better.

MATH474 - Time Series 474-3 Time Series. An introduction to time series: AR, MA and ARIMA models; estimation, time series models. Prerequisite: MATH 480 or MATH 483 with C or better.

MATH475 - Numerical Analysis I 475-3 Numerical Analysis I. (Same as CS 475) Introduction to theory & techniques for computation with digital computers. Topics include: solution of nonlinear equations; interpolation & approximation; solution of systems of linear equations; numerical integration. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course. Prerequisites: MATH 221 and MATH 250 with C or better.

MATH476 - Numerical Analysis II 476-3 Numerical Analysis II. (Same as CS 476) Continuation of MATH 475. Topics include: solution of ordinary differential equations; computation of eigenvalues and eigenvectors; and solution of partial differential equations. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course. Prerequisites: MATH 305 and MATH 475 with a C or better.

MATH480 - Prob Stoch Processes I 480-3 Probability, Stochastic Processes and Applications I. Introduction to the central topics of modern probability including elementary stochastic processes; random variables and their properties; sum of independent random variables and the Central Limit Theorem; random walks; discrete time finite state Markov chains; applications to random number generators and image and signal processing. Also generating functions, conditional probability, expectation, moments. Prerequisite: MATH 251 with C or better.

MATH481 - Prob Stoch Processes II 481-3 Probability, Stochastic Processes and Applications II. Continuation of MATH 480. Thorough introduction to Markov processes and Martingales, including the laws of large numbers, classification of states, recurrence, convergence to the stationary distribution in Markov chains, birth processes, Poisson processes, stopping times, and the Martingale convergence theorem. Important and current applications will be included. Prerequisite: MATH 480 with C or better.

MATH483 - Math Stats in Engr & Sci 483-4 Mathematical Statistics in Engineering and the Sciences. Develops the basic statistical techniques used in applied fields like engineering, and the physical and natural sciences. Principal topics include probability; random variables; expectations; moment generating functions; transformations of random variables; point and interval estimation; tests of hypotheses. Applications include one-way classification data and chi-square tests for cross classified data. Prerequisite: MATH 250 with C or better.

MATH484 - Applied Regression Analysis 484-3 Applied Regression Analysis and Experimental Design. Introduction to linear models and experimental design widely used in applied statistical work. Topics include linear models; analysis of variance; analysis of residuals; regression diagnostics; randomized blocks; Latin squares; factorial designs. Applications include response surface methodology and model building. Computations will require the use of a statistical package such as SAS. Prerequisite: MATH 221 and MATH 483 with C or better.

MATH485 - Applied Statistical Methods 485-3 Applied Statistical Methods. Introduction to sampling methods and categorical data analysis widely used in applied areas such as a social and biomedical sciences and business. Sampling methods topics include: simple random and stratified sampling; ratio and regression estimators. Categorical data analysis topics include: contingency tables; loglinear models; logistic regression; model selection; use of a computer package. Prerequisite: MATH 483 with C or better.

MATH486 - Statistical Computing 486-3 Statistical Computing. This course covers Statistical Computing Software packages such as R and SAS, Helps prepare students for SAS certification. Topics include obtaining and analyzing output for regression, experimental design, and generalized linear models. Prerequisites: MATH 484 and CS 202 both with C or better.

MATH490 - Topics in Mathematics 490-3 Topics in Mathematics. Selected topics in mathematics chosen from such areas as: (a) Financial Mathematics, Mathematical Biology or Actuarial Mathematics; (b) Probability, Statistics or Stochastic Processes; (c) Mathematical topics not including Statistics, such as Operations Research, Cryptography and High Dimensional computing in Numerical Analysis, etc. May be repeated up to 3 times as topics vary. Special approval needed from the instructor.

MATH495 - Special Topics in Math 495-1 to 6 Special Topics in Mathematics. Individual study or small group discussions in special areas of interest under the direction of a member of the faculty. Special approval needed from the chair and instructor.

MATH501 - Measure and Integration 501-3 Measure and Integration. This course is an introduction to measure theory and the Lebesgue integral. Its purpose is to develop many of the advanced mathematical tools that are necessary for the understanding of all other advanced courses in analysis. Topics will include: measures and measurable functions, Egoroff's theorem, the Lebesgue integral, Fatou's lemma, the monotone and dominated convergence theorems, functions of bounded variation and absolutely continuous functions, L_p -spaces, the Radon-Nikodym theorem, product measures, and Tonelli's and Fubini's theorems. Prerequisite: MATH 452.

MATH502 - Functional Analysis 502-3 Functional and Linear Analysis. This course is an introduction to infinite-dimensional spaces and their analysis. Topics include Hilbert and Banach spaces, separable and reflexive spaces, operators and their adjoints, and major theorems such as the Banach-Steinhaus, Open-Mapping, Closed Graph, Hahn-Banach, Riesz and matrix representation, Lax-Milgram, Arzela-Ascoli, Katos theorems. Spectral theory and applications to such areas as differential equations, Block iterations, quantum probability, fixed point theory or other areas are covered as time permits. Prerequisite: MATH 501 with a grade of B or better.

MATH505 - Ordinary Differential Equations 505-3 Ordinary Differential Equations. Existence and uniqueness theorems; general properties of solutions; linear systems; geometric theory of nonlinear equations; stability; self-adjoint boundary value problems; oscillation theorems. Theory will be illustrated with computer simulation of several real-world problems. Prerequisite: MATH 452 and MATH 421 or consent of instructor.

MATH506 - Adv Topics Ord Diff Equats 506-1 to 12 Advanced Topics in Ordinary Differential Equations. Selected advanced topics in ordinary differential equations chosen from such areas as: stability, oscillations, functional differential equations, perturbations, boundary value problems. Special approval needed from the instructor.

MATH507 - Partial Differential Equations 507-3 Partial Differential Equations. This course introduces the student to the mathematical techniques that are used to analyze qualitative properties of solutions to partial differential equations that arise in engineering and the sciences. Topics studied will include: function spaces including Sobolev spaces; weak derivatives; the Sobolev and Poincare inequalities; existence, uniqueness, and continuous dependence for model equations. Prerequisite: MATH 407 and MATH 501.

MATH511 - Adv Topics in Teaching of Math 511-3 Advanced Topics in the Teaching of Mathematics. (Same as CI 529) Selected advanced topics in the teaching of mathematics chosen from such areas as: pedagogical theories; instructional strategies; applications of mathematics; problem solving. This course is counted by the Mathematics department only as part of an approved minor. Special approval needed from the instructor.

MATH512A - Elem: Abstract Algebra 512A-1 to 3 Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Abstract Algebra. This course is counted by the Mathematics department only as part of an approved minor.

MATH512B - Elem: Geometry 512B-1 to 3 Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Geometry. This course is counted by the Mathematics department only as part of an approved minor.

MATH512C - Elem: Probability & Stats 512C-1 to 3 Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Probability and Statistics. This course is counted by the Mathematics department only as part of an approved minor.

MATH512D - Elem: Sets, Logic, Number Sys 512D-1 to 3 Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Sets, Logic and Number Systems. This course is counted by the Mathematics department only as part of an approved minor.

MATH512E - Elem:Applications of Math 512E-1 to 3 Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Applications of Mathematics. This course is counted by the Mathematics department only as part of an approved minor.

MATH512F - Elem: Algebra 512F-1 to 3 Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-Algebra. This course is counted by the Mathematics department only as part of an approved minor.

MATH512G - Elem: History of Math 512G-1 to 3 Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics-History of Mathematics. This course is counted by the Mathematics department only as part of an approved minor.

MATH513A - Secondary Math: Abstract Algebra 513A-1 to 3 Topics in Mathematics for Teachers of Secondary Mathematics- Abstract Algebra. This course is counted by the Mathematics department only as part of an approved minor.

MATH513B - Secondary Math: Geometry 513B-1 to 27 Topics in Mathematics for Teachers of Secondary Mathematics- Geometry. This course is counted by the Mathematics department only as part of an approved minor.

MATH513C - Secondary Math:Probability & Stat 513C-1 to 3 Topics in Mathematics for Teachers of Secondary Mathematics-Probability and Statistics. This course is counted by the Mathematics department only as part of an approved minor.

MATH513D - Secndry Mth:Sets,Logic,Numbers 513D-1 to 3 Topics in Mathematics for Teachers of Secondary Mathematics-Sets, Logic and Number Systems. This course is counted by the Mathematics department only as part of an approved minor.

MATH513E - Secondary Mth:Applications Math 513E-1 to 3 Topics in Mathematics for Teachers of Secondary Mathematics-Applications of Mathematics. This course is counted by the Mathematics department only as part of an approved minor.

MATH513F - Secondary Math: Topics 513F-1 to 3 Topics in Mathematics for Teachers of Secondary Mathematics-Analysis. This course is counted by the Mathematics department only as part of an approved minor.

MATH513G - Secondary:Discrete Math 513G-1 to 3 Topics in Mathematics for Teachers of Secondary Mathematics- Discrete Mathematics. This course is counted by the Mathematics department only as part of an approved minor.

MATH513H - Secondary: Topology 513H-1 to 3 Topics in Mathematics for Teachers of Secondary Mathematics-Topology. This course is counted by the Mathematics department only as part of an approved minor.

MATH513I - Secndry:Computer Simulation 513I-1 to 3 Topics in Mathematics for Teachers of Secondary Mathematics-Computer Simulation. This course is counted by the Mathematics department only as part of an approved minor.

MATH516A - Stat Analy in Soc Sci I 516A-4 Statistical Analysis in the Social Sciences. Descriptive statistics; graphic display of data; concepts of probability; statistical estimation, and hypothesis testing. Applications to social science data. This course does not give credit toward a mathematics major. Prerequisite: one year of high school algebra or equivalent.

MATH516B - Stat Analy in Soc Sci II 516B-4 Statistical Analysis in the Social Sciences. Matrix algebra; general linear model; multivariate statistics, ordinal and nominal measures of associations and causal modeling. Applications to social science data. This course does not give credit toward a mathematics major. Prerequisite: one year of high school algebra or equivalent.

MATH519 - Algebraic Structures I 519-3 Algebraic Structures I. Introduction to the basic techniques in the classification of finite groups, including homomorphism theorems, classification of finitely generated abelian groups, Sylow's theorems and classification of small groups, divisibility theory in rings, especially polynomial rings. Prerequisite: MATH 419 or consent of instructor.

MATH520 - Algebraic Structures II 520-3 Algebraic Structures II. Free modules, torsion modules, tensor products of modules, finitely generated modules over principal ideal domains, application of abelian groups, algebraic geometry, homological algebra and group cohomology. Prerequisite: MATH 519.

MATH522 - Adv Topics-Alg & Num Theory 522-1 to 12 Advanced Topics in Algebra and Number Theory. Selected topics in modern algebra and number theory chosen from such areas as: group theory, commutative algebra, non-commutative algebra, field theory, representation theory, analytical number theory, algebraic number theory, additive number theory. Diophantine approximations, Dirichlet series and automorphic form. Special approval needed from the instructor.

MATH525 - Analytic Number Theory 525-3 Analytic Number Theory. Introduction to modern analytic techniques used in the study of quadratic forms, the distribution of prime numbers, Diophantine approximations and other topics of classical number theory. Prerequisites: MATH 425 and MATH 419 with grades of C or better.

MATH526 - Algebraic Number Theory 526-3 Algebraic Number Theory. Introduction to the modern algebraic techniques used in the study of number theory. Advanced Galois Theory, algebraic integers, prime factorization of ideals, Dirichlet unit theorem, ramification theory, local fields, and other topics. Prerequisites: MATH 425 and MATH 455 with grades of C or better.

MATH530 - Topology 530-3 Topology. This course covers the basics of point-set topology, Urysohn's lemma, Tychonoff's theorem, the Barie category theorem, manifolds and the fundamental group. Prerequisite: MATH 430 or MATH 452 with a C or better.

MATH531 - Algebraic Topology 531-3 Algebraic Topology. This course covers homotopy and homology groups, exact sequences, CW complexes, axioms of homology, and beginnings of cohomology. Prerequisite: MATH 530 with a C or better.

MATH532 - Topics in Geom & Topology 532-1 to 12 Topics in Geometry and Topology. Topics may include dynamical systems, topological groups, knot theory, complexity theory, uniform spaces and frames, differential and Riemannian geometry, voting theory and mathematical physics. Special approval needed from the instructor.

MATH535 - Differential Geometry 535-3 Differential Geometry. This course covers differential forms, curvature, connections, integration on manifolds and may include Riemannian geometry or Lie groups. Prerequisite: MATH 530 with a C or better.

MATH540 - Convex Analysis 540-3 Convex Analysis. The course develops the basic results on convex sets and functions which are extensively used in several areas of applied mathematics and in business and engineering. Both finite and infinite dimensional spaces will be discussed. Topics covered include separation theorems, extreme points and the Krein-Milman Theorem. For infinite dimensional spaces elementary aspects of locally convex spaces will be covered. Applications include inequalities, constrained optimization and minimax theory. Prerequisite: MATH 452 or consent of instructor.

MATH549 - Combinatorial Theory 549-3 Combinatorial Theory. This course will introduce the student to various advanced topics in Combinatorial theory that are basic to modern methods in applicable mathematics. Possible topics include: Enumeration, Polya-Burnside theory, DeBruijn sequences, Graph theory, Cayley's Theorem, Ramsey's Theorem, Hall's Theorem, Design Theory, Distinct representatives, Latin squares and Finite geometries. Prerequisite: MATH 449 or consent of instructor.

MATH553 - Adv Topics Analys & Func Anlys 553-1 to 12 Advanced Topics in Analysis and Functional Analysis. Advanced topics in analysis and functional analysis from such areas as: harmonic analysis,

approximation theory, integration theory, advanced complex variables, topological vector spaces, operator theory, Banach algebras, distribution theory. Special approval needed from the instructor.

MATH555 - Complex Analysis 555-3 Complex Analysis. We review the field of complex numbers, differentiability, series convergence and the Cauchy integral formula for functions of a single complex variable. We go on to study the properties analytic, entire, meromorphic, and harmonic functions. We develop rigorous proofs of the Maximum modulus theorem, the Riemann mapping theorem, the residue theorem, and the Weierstrass factorization theorem and related results. If time permits the gamma and Riemann zeta functions are presented. Prerequisite: MATH 455.

MATH559 - Adv Topics in Combinatorics 559-1 to 12 Advanced Topics in Combinatorics. Selected advanced topics in combinatorics chosen from such areas as: graph theory; combinatorial designs; enumeration; random graphs; finite geometry; coding theory; cryptography; combinational algorithms. Special approval needed from the instructor.

MATH566 - Continuum Mechanics 566-3 Continuum Mechanics. This course will provide a rigorous development of the mechanics of solids and fluids. Topics will include: elements of tensor analysis; kinematics; balance of mass, linear momentum and angular momentum; the concept of stress; constitutive equations for fluid and solid bodies; and invariance of constitutive equations under a change in observer. Applications of continuum mechanics to the solution of problems in materials science will be included as time permits. Prerequisite: MATH 450 or MATH 452.

MATH569 - Adv Topics in Applied Math 569-1 to 12 Advanced Topics in Applied Mathematics. Selected advanced topics in applied mathematics chosen from such areas as: continuum mechanics; electromagnetic theory; control theory; mathematical physics. Special approval needed from the instructor.

MATH570 - Adv Topics: Optimization 570-1 to 12 Advanced Topics in Optimization. Selected advanced topics in optimization and operations research chosen from such areas as: calculus of variations, optimal control theory, nonlinear programming, convex analysis, non-smooth analysis, new flows, advanced computer simulation, large scale linear programming. Special approval needed from the instructor.

MATH572 - Adv Topics in Numerical Anlys 572-1 to 12 Advanced Topics in Numerical Analysis. (Same as CS 572) Selected advanced topics in numerical analysis chosen from such areas as: approximation theory, spline theory; special functions; wavelets; numerical solution of initial value problems; numerical solution of boundary value problems; numerical linear algebra; numerical methods of optimization; and functional analytic methods. Special approval needed from the instructor.

MATH574 - Approximation Theory 574-3 Approximation Theory. A study of techniques for approximating functions by polynomials, trigonometric polynomials, polynomial splines, wavelets, etc. Topics include: existence, uniqueness and characterization of best approximations in normed linear spaces; projection methods for good approximation; the Weierstrass, Muntz-Szasz, and Stone-Weierstrass theorems; degree of approximation and the Jackson theorems; construction of optimal min-max and least squares approximation using rational functions, splines, wavelets. Students will use MATLAB to study the quality of various approximations developed in the course. Prerequisite: MATH 452, MATH 475, and one of MATH 406, MATH 421.

MATH575 - Matrix Computations 575-3 Matrix Computations. A practical introduction to modern numerical linear algebra. Topics include: vector and matrix norms; Householder, Givens and Gauss transforms; factorization methods for solving systems of linear equations with roundoff error analysis; QR and SVD methods for solving linear least squares problems; the QR algorithm for computing the eigenvalues of a matrix. Students will use MATLAB to study the algorithms developed in the course. Prerequisite: MATH 475 and one of MATH 406, MATH 421.

MATH580 - Statistical Theory 580-3 Statistical Theory. The course gives a rigorous introduction to statistical inference. Topics covered include statistical models; sufficiency and completeness; Cramer-Rao bound; Rao-Blackwell theorem; best estimators; most powerful tests; likelihood ratio tests; elements of Bayes and minimax procedures. Prerequisite: MATH 483 or MATH 480.

MATH581 - Probability 581-3 Probability. A rigorous, measure-theoretic introduction to probability theory. Principal topics include general probability spaces, product spaces and product measures,

random variables as measurable functions, distribution functions, conditional expectation, types of convergence, characteristic functions and the Central Limit theorem, tail events and 0-1 laws, the Borel-Cantelli lemma, and the weak and strong law of large numbers. Concurrent course in real variables, MATH 501.

MATH582 - Adv Topics in Probability 582-1 to 6 Advanced Topics in Probability. Selected advanced topics in probability chosen from such areas as: martingales, Markov processes, Brownian motion, infinitely divisible laws. Special approval needed from the instructor.

MATH583 - Advanced Topics in Stats 583-1 to 12 Advanced Topics in Statistics. Selected advanced topics in statistics chosen from such areas as: advanced linear models, advanced experimental design, multivariate statistical analysis, decision theory, advanced nonparametric theory. Special approval needed from the instructor.

MATH584 - Linear Models 584-3 Linear Models. This course examines the theory of linear models with applications to the analysis of variance and regression and to the design of experiments. Least squares estimation, and testing for full rank and less than full rank models are covered. Prerequisites: MATH 221 and MATH 484 with grades of C or better.

MATH585 - Multivariate Analysis 585-3 Multivariate Analysis. This course examines the multivariate normal and elliptically contoured distributions, estimators of multivariate location and dispersion, Hotelling's T^2 test, MANOVA, multivariate regression, principal component analysis, factor analysis, canonical correlation analysis, discriminant analysis, and clustering. Prerequisites: MATH 483 and MATH 221 with grades of C or better.

MATH586 - Statistical Learning 586-3 Statistical Computing and Learning. This course covers Statistical Computing and Learning, including supervised and unsupervised learning, statistical computations in software packages such as R and SAS, loops, approximation of distribution functions, computation of maximum likelihood estimations, random number generation, bootstrap, Monte Carlo, permutation tests, and Bayesian techniques. Prerequisites: MATH 483 and MATH 221 with grades of C or better.

MATH590 - Contemporary Math Research 590-1 to 6 Contemporary Mathematics Research. Lectures on various mathematical topics of current research interest by members of the department and by distinguished visitors. Special approval needed from the graduate adviser.

MATH595 - Individual Study 595-1 to 12 Individual Study. Individual study supervised by a member of the continuing faculty. Graded S/U only. Special approval needed from the instructor.

MATH598 - Research Paper 598-1 to 6 Master's Research Paper. Minimum of three hours to be counted toward the Master of Arts or Science in Mathematics degree. Graded S/U only. Special approval needed from the instructor.

MATH599 - Thesis 599-1 to 6 Master's Thesis. Minimum of three hours to be counted toward the Master of Arts or Science in Mathematics degree. Graded S/U only. Special approval needed from the instructor.

MATH600 - Dissertation 600-1 to 30 (1 to 16 per semester) PhD Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree in Mathematics. Special approval needed from the instructor.

MATH601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

MATH699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Mathematics Faculty

Ban, Dubravka, Professor, Dr. Sci., University of Zagreb, 1998.
Beckemeyer, Imogene C., Assistant Professor, Emerita, M.A., Southern Illinois University, 1952.
Bhattacharya, Bhaskar, Professor and Chair, Ph.D., University of Iowa, 1993.
Burton, T. A., Professor, Emeritus, Ph.D., Washington State University, 1964.
Calvert, Wesley, Associate Professor, Ph.D., University of Notre Dame, 2005.
Choiy, Kwangho, Assistant Professor, Ph.D., Purdue University, 2012.
Clark, Lane, Professor, Emeritus, Ph.D., University of New Mexico, 1980.
Crenshaw, James, Associate Professor, Emeritus, Ph.D., University of Illinois, 1967.
Danhof, Kenneth, Professor, Emeritus, Ph.D., Purdue University, 1969.
Dharmadhikari, Sudhakar, Professor, Emeritus, Ph.D., University of California at Berkeley, 1962.
Earnest, Andrew, Professor, Emeritus, Ph.D., Ohio State University, 1975.
Elston, George, Assistant Professor, Emeritus, M.S., University of Wisconsin, 1949.
Feinsilver, Philip, Professor, Emeritus, Ph.D., New York University (Courant), 1975.
Fitzgerald, Robert W., Professor, Emeritus, Ph.D., University of California at Los Angeles, 1980.
Foland, Neal E., Professor, Emeritus, Ph.D., University of Missouri, 1961.
Grimmer, Ronald C., Professor, Emeritus, Ph.D., University of Iowa, 1967.
Hooker, John W., Professor, Emeritus, Ph.D., University of Oklahoma, 1967.
Hughes, Harry R., Associate Professor, Ph.D., Northwestern University, 1988.
Hunsaker, Worthen N., Professor, Emeritus, Ph.D., Washington State University, 1966.
Jeyaratnam, Sakthivel, Professor, Emeritus, Ph.D., Colorado State University, 1978.
Kammler, David, Professor, Emeritus, Ph.D., University of Michigan, 1971.
Kirk, Ronald B., Professor, Emeritus, Ph.D., California Institute of Technology, 1968.
Koch, Charles, Assistant Professor, Emeritus, Ph.D., University of Illinois, 1961.
Kocik, Jerzy, Associate Professor, Ph.D., Southern Illinois University Carbondale, 1989.
Langenhop, Carl E., Professor, Emeritus, Ph.D., Iowa State University, 1948.
Mark, Abraham M., Professor, Emeritus, Ph.D., Cornell University, 1947.
McSorley, John, Professor, Ph.D., Oxford University, 1988.
Moore, Robert A., Associate Professor, Emeritus, Ph.D., Indiana University, 1961.
Neuman, Edward G., Professor, Emeritus, Ph.D., University of Wroclaw (Poland), 1972.
Olive, David, Professor, Ph.D., University of Minnesota, 1998.
Paine, Thomas B., Assistant Professor, Emeritus, Ph.D., University of Oregon at Eugene, 1966.
Patula, William T., Professor, Emeritus, Ph.D., Carnegie-Mellon University, 1971.
Pedersen, Franklin D., Associate Professor, Emeritus, Ph.D., Tulane University, 1967.
Pericak-Spector, Kathleen, Professor, Emerita, Ph.D., Carnegie-Mellon University, 1980.
Redmond, Donald, Associate Professor, Ph.D., University of Illinois, 1976.
Samadi, Yaser, Assistant Professor, Ph.D., University of Georgia, 2014.
Schurz, Henri, Professor, Ph.D., Humboldt University, Berlin, 1997.
Spector, Scott J., Professor, Emeritus, Ph.D., Carnegie-Mellon University, 1978.
Sullivan, Michael, Professor, Ph.D., University of Texas at Austin, 1992.
Wallis, Walter, Professor, Emeritus, Ph.D., University of Sydney, 1968.
Wright, Mary H., Professor, Emerita, Ph.D., McGill University (Montreal), 1977.
Xiao, Mingqing, Professor, Ph.D., University of Illinois, 1997.
Xu, Dashun, Professor, Ph.D., Memorial University of Newfoundland, 2004.
Xu, Jianhong, Associate Professor, Ph.D., University of Connecticut 2003.
Yucas, Joseph, Professor, Emeritus, Ph.D., Pennsylvania State University, 1978.
Zeman, Marvin, Professor, Emeritus, Ph.D., New York University (Courant Institute), 1974.

Mass Communication and Media Arts

The School of Information Systems and Applied Technologies in the College of Applied Sciences and Arts offers the following technically related courses. These courses serve as common requirements for various majors. Selected courses are available to students enrolled in other academic units.

Game Design and Development Minor (15 credit hours)

The minor in Game Design and Development (GDD) is a multi-disciplinary minor offered by the School of Information Systems and Applied Technologies (ISAT), and the College of Mass Communication and Media Arts (MCMA). The purpose of this minor is to prepare students who wish to enter the field of game design and development. The Game Design and Development minor requires 15 credits. For IST majors, the required courses are RTD 201 and IST 392; for all other majors, IST 209 and MCMA 499 are required. Only after completing 12 credit hours in GDD can students take the capstone course of IST 392 (IST major) or MCMA 499 (all other majors). This course is co-taught by two faculty (one from IST and one from MCMA) as an independent study. The GDD minor students are required to display their final project at each program's website and/or showcase.

The approved electives are in two areas for 9 credit hours: Game Studies and Production RTD 331, RTD 378, RTD 382, RTD 478, RTD 487--and Game Programming (Prerequisite)--IST 312 (209), IST 336 (209), IST 403 (312), IST 422 (312 & 336), & IST 446 (209). All prerequisites for these courses must be fulfilled prior to enrollment in each course. All courses for this minor must be completed with a grade of C or better. All students who wish to enroll in this minor must do so through the ISAT advisor or the MCMA advisors. The required courses for each major (IST & RTD) will not be counted as the GDD minor course.

Required (6 credit hours):

- RTD 201¹ - Introduction to Media Production
- IST 392² - Special Projects
- IST 209¹ - Introduction to Programming
- MCMA 499² - Independent Study

Elective Courses (9 credit hours):

Game Studies and Production

- RTD 331 - Digital Graphics Foundations
- RTD 378 - Writing for Game Production
- RTD 382 - 2D Digital Character Animation 1
- RTD 478 - Game Narrative
- RTD 487- 3D Animation 1: Modeling

Game Programming

- IST 312 - Digital Graphics Foundations
- IST 336¹ - Web-based Applications in Information Systems
- IST 403 - Client-Side Web Development
- IST 422 - Mobile Programming
- IST 446 - Software Engineering and Management

¹The required courses for each major (IST & RTD) will not be counted as the GDD minor courses.

²A GDD minor student should also take it as the final course after finishing taking 12 credit hours in GDD minor certificate requirement. It is co-taught by two faculty from IST and RTD as an independent study. The final artifact will be demonstrated on each program's website.

Mass Communication and Media Arts Courses

MCMA200 - Media & Information Literacy 200-3 Media and Information Literacy. (University Core Curriculum) The course will introduce students to the many roles media have in everyday lives, and their influence on individuals and societies. It will provide skills to critically analyze various contents offered by media (e.g., news, advertising, video games, facebook pages)-in all its forms: television, radio, print, internet, and mobile media; and an understanding of the institutions that produce these media and their economic and political interests. In this course we will ask ourselves: what does an educated person

need to know about media today in order to take full advantage of everything they are offering us, and yet guard against potential negative influences?

MCMA204 - Altrn Media in Diverse Society 204-3 Alternative Media in a Diverse Society. (University Core Curriculum) The freedoms guaranteed in the First Amendment have resulted in a multitude of alternatives to the establishment media. These alternative media give voice to a range of communities ignored or suppressed by the dominant culture. Publications, alternative art spaces, film, radio and television messages and the groups and individuals who create them are examined.

MCMA497 - Special Interdisciplnry Study 497-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Mass Communication and Media Arts. Incorporation course fee: \$25.

MCMA499 - Independent Study 499-1 to 3 Independent Study. (Same as IST 392) Supervised research, project, or creative work. The area of study is proposed by the student with the approval of a Mass Communication and Media Arts faculty member. Not for graduate credit. Special approval needed from the instructor.

MCMA500 - Media as Social Institutions 500-3 Media as Social Institutions. Provides an introduction to major issues involving media in contemporary societies. Multi-disciplinary in nature, the course introduces major theoretical perspectives used in reviewing media productions and activities and the relationships among media organizations and practitioners and other institutions of society.

MCMA501 - Intellectual Property 501-3 Intellectual Property and the Law. Examines intellectual property in legal, economic, and cultural terms. Topics may include copyright, patents, trademarks, entertainment law, and infringement.

MCMA502 - Media Economics 502-3 Media Economics. Introduction to political economy of the media. Addresses core concepts, theories, and methods used to understand media as cultural industries.

MCMA503 - Media & Technology 503-3 Media and Technology. A survey of the major technological changes in mass media and their impacts on society and the media industries. On completion of the course students should have a basic understanding of the role of media technology in shaping communication patterns and their social outcomes.

MCMA504 - Foundations Media Theory 504-3 Foundations of Media Communication Theory. Principal theoretical approaches to media analysis, addressing empiricist, cinema studies, media studies and cultural studies research paradigms. Historical and cultural contexts of media theory construction. Focus on original texts.

MCMA505 - Advanced Media Theory 505-3 Advanced Theoretical Issues in Media Communication. Analysis and critique of advanced and recent theory and research trends in media studies, cultural studies, communication technology studies and mass communication research. Prerequisite: MCMA 504.

MCMA506 - Law and Policy Mass Comm 506-3 Law and Policy of Mass Communication. Focuses on free expression in journalism and entertainment across the media. Topics may include news gathering techniques, intellectual property, the Internet, and governmental regulation. The course pays special attention to the tension between what is legal and what is ethical.

MCMA507 - Media Management 507-3 Media Management. Analysis of a variety of media industries, including industry structures, and the industry processes of media development, production, and distribution. Attention to management of media companies across sectors as the industry adjusts to economic and technological change.

MCMA508 - Concept Found Research 508-3 Conceptual Foundations of Research Strategy. Analysis and evaluation of conceptual frameworks underlying empirical research strategies, positivist, textual and qualitative, commonly used in media and internet research. Issues in multi-method research strategies are reviewed. Ethical implications are debated.

MCMA509 - Media Ethics 509-3 Media Ethics. Overview of ethics philosophies and accountability tools for the mass media. Areas to be studied include journalism reviews, ethics codes, ombudsmen, media

critics, news councils, and public/civic journalism. Covering issues in journalism, photojournalism, public relations, advertising, new media, and "infotainment."

MCMA511 - New Media Production 511-3 New Media Production. Investigate how the Internet works, explore relationships among design, technology, and user experience while developing web sites, information architectures, interface behaviors, and navigation systems. Topics include: HTML & XHTML authoring, Cascading Style Sheets, Javascript, open source software, and incorporating sound, video, and images into web pages. Issues of privacy, legal and ethical responsibilities for consumers and producers of web content.

MCMA512 - Web & Interaction Design 512-3 Web and Interaction Design. The Web is part of a larger environment that constantly evolves in relation to social and technological developments. Design principles, HTML5 authoring, cascading style sheets and web usability. Investigates the design of online experiences through lectures, discussions, workshops, and projects. Relationships are explored among design, technology, and user experience in the context of contemporary Internet cultures and develop skills in designing information architectures, interface behaviors, navigation systems, and typographic and image strategies for the Web. Prerequisite: New Media Production or an introductory web production course with permission of the instructor. Lab Fee: \$50.

MCMA513 - Civil Society Media Mgt 513-3 Media Management of Civil Society Organizations. Investigate the multiple roles, contributions, and approaches employed in developing communication and media efforts of civil society organizations (NGOs, NFPs, NPOs), especially the role of the Communicator, or Media Officer. Students will be able to assess this as a professional option and be equipped with a conceptual and practical 'tool box' for succeeding in this role.

MCMA516 - NET.ART 516-3 NET.ART. History, theory, and practice of digital media as an online art form. Examine and produce works in linear and non-linear hypermedia narrative, network conceptualism, and generative software. Issues include identity, location, collaboration, surveillance, hacktivism, tactical media, immersion, game design, media synthesis. Lab fee: \$20.

MCMA530 - Historical Research Methods 530-3 Historical Research in the Mass Media. Covers a variety of approaches to historical research used by media scholars. Examines how scholars conceive of their object of study, use primary sources, and how they construct the basis of the narrative and analytic discussions of their topic. Focus on historiography and methodology, including data collection, analysis, organization and presentation. Students will use sources including but not limited to newspapers, archives, personal papers, manuscripts, and oral histories.

MCMA531 - Critical Res Method Media Arts 531-3 Critical Research Methods in Media Arts. This course introduces students to critical and interpretive research methods and techniques for the study of media arts and culture. It focuses on interdisciplinary approaches and covers a range of methods and theoretical perspectives that may include historiography, ideological and textural analysis, semiotics, psychoanalysis, critical ethnography and auto-ethnography, and/or other critical methods. Areas of emphasis may vary by instructor. This course may be repeated when the topic differs. Prerequisite: MCMA 551.

MCMA532 - Quantitative Research Methods 532-3 Quantitative Research Methods in Mass Communication. Identification of relevant research topics, critical evaluation of existing research literature, and development of a detailed research proposal. Emphasis on quantitative methods such as sampling, surveys, research design, experiments, content analysis, and introductory statistics.

MCMA534 - Qualitative Research Methods 534-3 Qualitative Research Methods. An introduction to the intellectual underpinnings, epistemology, and methodologies of qualitative research. The course focuses on critical and interpretive approaches to researching media industry structures, artifacts, audiences, and producers.

MCMA535 - Textual Analysis 535-3 Textual Analysis. This class examines methods of textual analysis in the media arts with references to their historical, theoretical, and practical contexts.

MCMA536 - Content Analysis 536-3 Media Content Analysis. Overview of methods and problems of systematically analyzing mass media messages with critique of published studies. Experience in

conducting a content analysis project on a topic of current scholarly significance in mass communication and media arts. Prerequisite: MCMA 532.

MCMA537 - Intro Communication Research 537-3 Introduction to Communication Research. Reviews the basic knowledge of research and prepares students to understand, apply and interpret information, research and other published work. Covers elements of research, scales of measurement, sampling procedures, research process, qualitative and quantitative methods and writing research reports. Qualitative methods include case studies, focus groups and intensive interviews. Quantitative methods include surveys, experiments and content analysis. Introduction to use of elementary statistics and data analysis will give students a better understanding of empirical research. Objective is to prepare students for writing term papers, professional careers and the final critical inquiry research project.

MCMA538 - Discourse Analysis 538-3 Critical Analysis of Discourse. Critical Discourse Analysis is a theory-based methodology which takes as its unit of analysis the entire 'utterance' (e.g. news bulletin, newspaper article, Facebook posting, a hashtag). Its methods are closer to literary and rhetorical criticism than the quantitative word count of content analysis. This methodology allows the research to unveil ideological motivations in language use and in images, and can be applied to most forms of media texts including social media and video games.

MCMA539 - Legal & Govern Research 539-3 Legal and Governmental Research in the Mass Media. Research procedures used to find and analyze documents generated by executive, legislative, and judicial entities. Prerequisite: MCMA 506.

MCMA540 - Critical Documentary Practices 540-3 Critical Documentary Practices. Documentary is both a product of existing social conditions and a form of critical opposition to them. This course will emphasize independent video production from invention of the documentary idea to post-production. Emphasis on connections between critical theory and media production. Students will embrace the conceptual and hands-on process of researching, writing and producing independent documentary video, focusing on critical arts practice.

MCMA543 - Media Arts Studio Seminar 543-15 (1-3,1-3,1-3,1-3,1-3) Media Arts Studio Seminar. A forum for the pursuit of creative projects in the media arts. May be repeated as topic changes. Restricted to CMCMA MFA or PMMM major or consent of instructor or director of Graduate Studies in Mass Communication and Media Arts. Laboratory fee: \$50.

MCMA546 - Seminar Film Theory 546-6 (3,3) Seminar Film Theory. Advanced study of major currents in film theory and intensive consideration of particular topics in film theory. Discussion of early debates about aesthetics, perception and realism; linguistically modeled, structuralist, formalist and psychoanalytic theories; ideological, deconstructionist, feminism reception and other postmodern theoretical trends. Special topics might include: feminism and film, Freudian concepts for film, Marxism and film, film and language, formalist film theory, spectatorship, film and perception. Intensive weekly reading and discussion. Films are screened in relation to theoretical topics and assigned readings. Screening fee: \$20.

MCMA548 - MFA Projects 548-1 to 15 MFA (Master of Fine Arts) Projects. Supervised independent creative work in media arts, the exact nature of which is to be determined in consultation with the MFA faculty member. Consent of instructor. Equipment usage fee: \$50.

MCMA549 - Pro Documentary Practice 549-3 Professional Documentary Practice. Production students will work with experts from a variety of specializations across campus to produce short form documentaries for broadcast on WSIU. A comprehensive overview of producing successful programs for the industry taking the topic from scripting to filming to editing. Advanced video or audio production skills are required.

MCMA550 - History Media Arts & Culture 550-3 History of Media Arts & Culture. Introduces the history of the reproducible media arts, beginning with their prehistory in printmaking, and focusing on photography, cinema, radio, television, video, and other visual, audio, and digital media. Locates media technologies in the historical, material conditions of their emergence, consider how media interact with and make history, how media art forms and movements arise historically and how these relate to mass media. Screening fee: \$35.

MCMA551 - Theory of the Media Arts 551-3 Theory of the Media Arts. A survey of the major theoretical debates about the reproducible media arts with particular emphasis on the relationship between mass media, new media technologies, and art. Debates will be grounded in the study of aesthetic practices, technological innovations, political-economic settings, and overall historical context within which they emerged. Prerequisite: MCMA 550. Screening fee: \$35.

MCMA552 - History Theory Media Art 552-3 Seminar: Topics History and Theory of Media Arts. This course provides an in-depth study and discussion of selected topics in the history and theory of the media arts. Topics vary and will be announced in advance. This course may be repeated when the topic differs. Screening Fee: \$35.

MCMA555 - Topical Seminars 555-(3,3,3,3,3) Topical Seminars. Seminars on subjects of current interest, with the topics determined through students and faculty request and interest.

MCMA557 - MFA Studio Arts Practice 557-6 (3,3) MFA (Master of Fine Arts) Studio Arts Practice. The first-year course for all incoming MFA (Master of Fine Arts) students in the college serves as an introduction to media creation strategies and concepts. The emphasis is on aesthetic and conceptual development as encountered within a variety of media arts. The course is team taught by a number of faculty in modules dedicated to various media forms- still image, time-based, spatial, and interactive. Restricted to CMCMA MFA major or consent of instructor or associate dean of graduate studies in Mass Communication and Media Arts. Lab fee: \$75.

MCMA558 - MFA Studio Critique 558-9 (3,3,3) MFA (Master of Fine Arts) Studio Critique. This critique-based seminar course is offered each semester to all graduate students in the MFA program except those in their last semester of thesis work. The goal for this course is to create an interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, and critique their peers' works. Restricted to CMCMA MFA major or consent of instructor or associate dean of graduate studies in Mass Communication and Media Arts. Lab fee: \$75.

MCMA560 - Studies in Media History 560-3 Studies in Media History. Examine the histories and social effects across media including: books, newspapers, magazines, film, radio, television and the internet. This study will investigate the conceptual dimensions of communication history by examining social, economic, cultural, and political histories of the field.

MCMA561 - Communication Social Change 561-3 Communication for Social Change. Evolution of communication and social change theories and practices; contextual factors (including aid, trade and development policies); organizations influential in formulating and implementing policy; communication intervention strategies; evolving journalism practices.

MCMA562 - Significant Studies Mass Com Res 562-3 Significant Studies in Mass Communication Research. A review of a broad selection of early literature in communication research that has provided much of the conceptual basis for empirical studies during the past two decades.

MCMA563 - Globalization & Media 563-3 Globalization and the Media. Debates about globalization from historical, theoretical, and critical perspectives. The major uses of communication technologies in international economic, political and cultural processes. Topics include regional and global trends, trade regimes, global policy bodies and policy issues; global media influence.

MCMA564 - Political Economy of Media 564-3 Political Economy of Media. Addresses the intersections of politics, economics, and social structures that underpin media arts and industries at global and national levels. Emphasizes the relationship between theories and methods.

MCMA565 - Strategic Advertising 565-3 Strategic Advertising Communication. Problem solving through strategic advertising communications and functional marketing communication, including branding, advertising, PR, sales promotion and direct response in an integrated program. The focus is on strategy and planning, and students will concentrate on integrating targets, timing and message strategy.

MCMA566 - Brand Management 566-3 Brand Management Communication. A conceptual synthesis and practical application of business, research, media and creative principles used in the formulation for a branding/advertising campaign. It includes the development of a complete integrated marketing communications (IMC) campaign for a specific brand.

MCMA568 - Social Media Theory/Practice 568-3 Social Media Theory and Practice. Explores social media from various perspectives. Topics will cover history and development of social media, social advertising/marketing, citizen journalism, social media and health communication, and other issues related to social media such as privacy, gaming, interface design, identity, etc. Students will gain hands-on experience with social media.

MCMA569 - Alt Media Power & Resistance 569-3 Alternative Media: Power and Resistance. Explores "alternative media" as counter hegemonic practice. Course examines various forms of alternative media and different meanings ascribed to them. Case studies locally and around the world demonstrate the growing relevance of alternative media in contemporary societies and the complex relationships they navigate with political and social movements, governments, the private sector, and mainstream forms of media.

MCMA582 - Game Narratives 582-3 Game Narratives. Teaches students the core ideas and practices of game narratives. It covers: a) The conceptual fundamentals of theories of game narrative design; b) The technical and organizational process of creating a narrative game. This includes designing and implementing a narrative game using an appropriate software tool. While game narrative is at the center of this course, the skills and knowledge acquired in this class are applicable to broad range of design-centric fields and contexts.

MCMA586 - Professional Media Projects 586-1 to 6 Professional Media Projects. Supervised independent media production work, the amount and exact nature of which is to be determined in consultation with MCMA faculty. More than one section may be taken in the same semester. Restricted to PMMM major or consent of instructor or director of Graduate Studies in MCMA. Lab fee: \$50.

MCMA589 - MS Report/Project 589-3 MS Report/Project. Research report or media project accompanied by abbreviated research report, directed by a minimum of one member of the graduate faculty in CMCMA. The research report, which is the synthesis of existing literature on a specific topic or the contextualization of an original media project, must be submitted to the Graduate School. Public presentation of the project required. Restricted to PMMM major.

MCMA591 - Readings 591-1 to 6 Readings. Supervised readings on subject matter not covered in regularly scheduled courses. Graduate students limited to three credits per semester. Consent of instructor.

MCMA592 - Master's Seminar 592-3 Master's Seminar. This course orients students to graduate level study in mass communication and media arts. Applied general research skills, literature reviews and proposal writing among other topics are covered. Students work on directed projects, culminating in a proposal for future research or media production. Restricted to CMCMA PMMM, MTR, or MFA major or consent of instructor or associate dean of graduate studies in Mass Communication and Media Arts.

MCMA594 - Practicum 594-3 Practicum. Study, observation and participation in activities related to the fields of Mass Communication and the Media Arts such as internships in related professional organizations. Restricted to CMCMA major.

MCMA595 - Ph.D. Proseminar 595-3 Ph.D. Proseminar. Provides PhD students in the College of Mass Communication and Media Arts a general orientation to the program. Forum for further discussion of topics and issues raised in visiting lectures scheduled through the college which students will be required to attend. Provides a framework for preparation for the annual MCMA research convention at which students will be required to present. Restricted to MCMA major or consent of instructor or associate dean of Graduate Studies in Mass Communication and Media Arts.

MCMA596 - Independent Study 596-1 to 6 (1 to 3 per semester) Independent Study. Supervised research or independent creative work, the area of study to be determined by the student in consultation with instructor. Consent of instructor.

MCMA599 - Thesis 599-1 to 6 Thesis. Thesis requirements may be satisfied only by a written thesis for an MA in Media Theory and Research and by a creative thesis for an MFA in Mass Communication and Media Arts. Minimum of three hours required for the MA in MTR degree and minimum of six hours

required for MFA in MCMA. Graded S/U. Restricted to CMCMA MTR and MFA major. Only MFA thesis course carries a lab fee of \$75 per enrollment.

MCMA600 - Dissertation 600-1 to 32 (1-12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

MCMA601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours dissertation research or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

MCMA200 - Media & Information Literacy 200-3 Media and Information Literacy. (University Core Curriculum) The course will introduce students to the many roles media have in everyday lives, and their influence on individuals and societies. It will provide skills to critically analyze various contents offered by media (e.g., news, advertising, video games, facebook pages)-in all its forms: television, radio, print, internet, and mobile media; and an understanding of the institutions that produce these media and their economic and political interests. In this course we will ask ourselves: what does an educated person need to know about media today in order to take full advantage of everything they are offering us, and yet guard against potential negative influences?

MCMA204 - Altrn Media in Diverse Society 204-3 Alternative Media in a Diverse Society. (University Core Curriculum) The freedoms guaranteed in the First Amendment have resulted in a multitude of alternatives to the establishment media. These alternative media give voice to a range of communities ignored or suppressed by the dominant culture. Publications, alternative art spaces, film, radio and television messages and the groups and individuals who create them are examined.

MCMA497 - Special Interdisciplinary Study 497-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Mass Communication and Media Arts. Incorporation course fee: \$25.

MCMA499 - Independent Study 499-1 to 3 Independent Study. (Same as IST 392) Supervised research, project, or creative work. The area of study is proposed by the student with the approval of a Mass Communication and Media Arts faculty member. Not for graduate credit. Special approval needed from the instructor.

MCMA500 - Media as Social Institutions 500-3 Media as Social Institutions. Provides an introduction to major issues involving media in contemporary societies. Multi-disciplinary in nature, the course introduces major theoretical perspectives used in reviewing media productions and activities and the relationships among media organizations and practitioners and other institutions of society.

MCMA501 - Intellectual Property 501-3 Intellectual Property and the Law. Examines intellectual property in legal, economic, and cultural terms. Topics may include copyright, patents, trademarks, entertainment law, and infringement.

MCMA502 - Media Economics 502-3 Media Economics. Introduction to political economy of the media. Addresses core concepts, theories, and methods used to understand media as cultural industries.

MCMA503 - Media & Technology 503-3 Media and Technology. A survey of the major technological changes in mass media and their impacts on society and the media industries. On completion of the course students should have a basic understanding of the role of media technology in shaping communication patterns and their social outcomes.

MCMA504 - Foundations Media Theory 504-3 Foundations of Media Communication Theory. Principal theoretical approaches to media analysis, addressing empiricist, cinema studies, media studies and cultural studies research paradigms. Historical and cultural contexts of media theory construction. Focus on original texts.

MCMA505 - Advanced Media Theory 505-3 Advanced Theoretical Issues in Media Communication. Analysis and critique of advanced and recent theory and research trends in media studies, cultural studies, communication technology studies and mass communication research. Prerequisite: MCMA 504.

MCMA506 - Law and Policy Mass Comm 506-3 Law and Policy of Mass Communication. Focuses on free expression in journalism and entertainment across the media. Topics may include news gathering techniques, intellectual property, the Internet, and governmental regulation. The course pays special attention to the tension between what is legal and what is ethical.

MCMA507 - Media Management 507-3 Media Management. Analysis of a variety of media industries, including industry structures, and the industry processes of media development, production, and distribution. Attention to management of media companies across sectors as the industry adjusts to economic and technological change.

MCMA508 - Concept Found Research 508-3 Conceptual Foundations of Research Strategy. Analysis and evaluation of conceptual frameworks underlying empirical research strategies, positivist, textual and qualitative, commonly used in media and internet research. Issues in multi-method research strategies are reviewed. Ethical implications are debated.

MCMA509 - Media Ethics 509-3 Media Ethics. Overview of ethics philosophies and accountability tools for the mass media. Areas to be studied include journalism reviews, ethics codes, ombudsmen, media critics, news councils, and public/civic journalism. Covering issues in journalism, photojournalism, public relations, advertising, new media, and "infotainment."

MCMA511 - New Media Production 511-3 New Media Production. Investigate how the Internet works, explore relationships among design, technology, and user experience while developing web sites, information architectures, interface behaviors, and navigation systems. Topics include: HTML & XHTML authoring, Cascading Style Sheets, Javascript, open source software, and incorporating sound, video, and images into web pages. Issues of privacy, legal and ethical responsibilities for consumers and producers of web content.

MCMA512 - Web & Interaction Design 512-3 Web and Interaction Design. The Web is part of a larger environment that constantly evolves in relation to social and technological developments. Design principles, HTML5 authoring, cascading style sheets and web usability. Investigates the design of online experiences through lectures, discussions, workshops, and projects. Relationships are explored among design, technology, and user experience in the context of contemporary Internet cultures and develop skills in designing information architectures, interface behaviors, navigation systems, and typographic and image strategies for the Web. Prerequisite: New Media Production or an introductory web production course with permission of the instructor. Lab Fee: \$50.

MCMA513 - Civil Society Media Mgt 513-3 Media Management of Civil Society Organizations. Investigate the multiple roles, contributions, and approaches employed in developing communication and media efforts of civil society organizations (NGOs, NFPs, NPOs), especially the role of the Communicator, or Media Officer. Students will be able to assess this as a professional option and be equipped with a conceptual and practical 'tool box' for succeeding in this role.

MCMA516 - NET.ART 516-3 NET.ART. History, theory, and practice of digital media as an online art form. Examine and produce works in linear and non-linear hypermedia narrative, network conceptualism, and generative software. Issues include identity, location, collaboration, surveillance, hacktivism, tactical media, immersion, game design, media synthesis. Lab fee: \$20.

MCMA530 - Historical Research Methods 530-3 Historical Research in the Mass Media. Covers a variety of approaches to historical research used by media scholars. Examines how scholars conceive of their object of study, use primary sources, and how they construct the basis of the narrative and analytic discussions of their topic. Focus on historiography and methodology, including data collection, analysis, organization and presentation. Students will use sources including but not limited to newspapers, archives, personal papers, manuscripts, and oral histories.

MCMA531 - Critical Res Method Media Arts 531-3 Critical Research Methods in Media Arts. This course introduces students to critical and interpretive research methods and techniques for the study of media arts and culture. It focuses on interdisciplinary approaches and covers a range of methods and theoretical perspectives that may include historiography, ideological and textual analysis, semiotics, psychoanalysis, critical ethnography and auto-ethnography, and/or other critical methods. Areas of

emphasis may vary by instructor. This course may be repeated when the topic differs. Prerequisite: MCMA 551.

MCMA532 - Quantitative Research Methods 532-3 Quantitative Research Methods in Mass Communication. Identification of relevant research topics, critical evaluation of existing research literature, and development of a detailed research proposal. Emphasis on quantitative methods such as sampling, surveys, research design, experiments, content analysis, and introductory statistics.

MCMA534 - Qualitative Research Methods 534-3 Qualitative Research Methods. An introduction to the intellectual underpinnings, epistemology, and methodologies of qualitative research. The course focuses on critical and interpretive approaches to researching media industry structures, artifacts, audiences, and producers.

MCMA535 - Textual Analysis 535-3 Textual Analysis. This class examines methods of textual analysis in the media arts with references to their historical, theoretical, and practical contexts.

MCMA536 - Content Analysis 536-3 Media Content Analysis. Overview of methods and problems of systematically analyzing mass media messages with critique of published studies. Experience in conducting a content analysis project on a topic of current scholarly significance in mass communication and media arts. Prerequisite: MCMA 532.

MCMA537 - Intro Communication Research 537-3 Introduction to Communication Research. Reviews the basic knowledge of research and prepares students to understand, apply and interpret information, research and other published work. Covers elements of research, scales of measurement, sampling procedures, research process, qualitative and quantitative methods and writing research reports. Qualitative methods include case studies, focus groups and intensive interviews. Quantitative methods include surveys, experiments and content analysis. Introduction to use of elementary statistics and data analysis will give students a better understanding of empirical research. Objective is to prepare students for writing term papers, professional careers and the final critical inquiry research project.

MCMA538 - Discourse Analysis 538-3 Critical Analysis of Discourse. Critical Discourse Analysis is a theory-based methodology which takes as its unit of analysis the entire 'utterance' (e.g. news bulletin, newspaper article, Facebook posting, a hashtag). Its methods are closer to literary and rhetorical criticism than the quantitative word count of content analysis. This methodology allows the research to unveil ideological motivations in language use and in images, and can be applied to most forms of media texts including social media and video games.

MCMA539 - Legal & Govern Research 539-3 Legal and Governmental Research in the Mass Media. Research procedures used to find and analyze documents generated by executive, legislative, and judicial entities. Prerequisite: MCMA 506.

MCMA540 - Critical Documentary Practices 540-3 Critical Documentary Practices. Documentary is both a product of existing social conditions and a form of critical opposition to them. This course will emphasize independent video production from invention of the documentary idea to post-production. Emphasis on connections between critical theory and media production. Students will embrace the conceptual and hands-on process of researching, writing and producing independent documentary video, focusing on critical arts practice.

MCMA543 - Media Arts Studio Seminar 543-15 (1-3,1-3,1-3,1-3,1-3) Media Arts Studio Seminar. A forum for the pursuit of creative projects in the media arts. May be repeated as topic changes. Restricted to CMCMA MFA or PMMM major or consent of instructor or director of Graduate Studies in Mass Communication and Media Arts. Laboratory fee: \$50.

MCMA546 - Seminar Film Theory 546-6 (3,3) Seminar Film Theory. Advanced study of major currents in film theory and intensive consideration of particular topics in film theory. Discussion of early debates about aesthetics, perception and realism; linguistically modeled, structuralist, formalist and psychoanalytic theories; ideological, deconstructionist, feminism reception and other postmodern theoretical trends. Special topics might include: feminism and film, Freudian concepts for film, Marxism and film, film and language, formalist film theory, spectatorship, film and perception. Intensive weekly reading and discussion. Films are screened in relation to theoretical topics and assigned readings. Screening fee: \$20.

MCMA548 - MFA Projects 548-1 to 15 MFA (Master of Fine Arts) Projects. Supervised independent creative work in media arts, the exact nature of which is to be determined in consultation with the MFA faculty member. Consent of instructor. Equipment usage fee: \$50.

MCMA549 - Pro Documentary Practice 549-3 Professional Documentary Practice. Production students will work with experts from a variety of specializations across campus to produce short form documentaries for broadcast on WSIU. A comprehensive overview of producing successful programs for the industry taking the topic from scripting to filming to editing. Advanced video or audio production skills are required.

MCMA550 - History Media Arts & Culture 550-3 History of Media Arts & Culture. Introduces the history of the reproducible media arts, beginning with their prehistory in printmaking, and focusing on photography, cinema, radio, television, video, and other visual, audio, and digital media. Locates media technologies in the historical, material conditions of their emergence, consider how media interact with and make history, how media art forms and movements arise historically and how these relate to mass media. Screening fee: \$35.

MCMA551 - Theory of the Media Arts 551-3 Theory of the Media Arts. A survey of the major theoretical debates about the reproducible media arts with particular emphasis on the relationship between mass media, new media technologies, and art. Debates will be grounded in the study of aesthetic practices, technological innovations, political-economic settings, and overall historical context within which they emerged. Prerequisite: MCMA 550. Screening fee: \$35.

MCMA552 - History Theory Media Art 552-3 Seminar: Topics History and Theory of Media Arts. This course provides an in-depth study and discussion of selected topics in the history and theory of the media arts. Topics vary and will be announced in advance. This course may be repeated when the topic differs. Screening Fee: \$35.

MCMA555 - Topical Seminars 555-(3,3,3,3,3) Topical Seminars. Seminars on subjects of current interest, with the topics determined through students and faculty request and interest.

MCMA557 - MFA Studio Arts Practice 557-6 (3,3) MFA (Master of Fine Arts) Studio Arts Practice. The first-year course for all incoming MFA (Master of Fine Arts) students in the college serves as an introduction to media creation strategies and concepts. The emphasis is on aesthetic and conceptual development as encountered within a variety of media arts. The course is team taught by a number of faculty in modules dedicated to various media forms- still image, time-based, spatial, and interactive. Restricted to CMCMA MFA major or consent of instructor or associate dean of graduate studies in Mass Communication and Media Arts. Lab fee: \$75.

MCMA558 - MFA Studio Critique 558-9 (3,3,3) MFA (Master of Fine Arts) Studio Critique. This critique-based seminar course is offered each semester to all graduate students in the MFA program except those in their last semester of thesis work. The goal for this course is to create an interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, and critique their peers' works. Restricted to CMCMA MFA major or consent of instructor or associate dean of graduate studies in Mass Communication and Media Arts. Lab fee: \$75.

MCMA560 - Studies in Media History 560-3 Studies in Media History. Examine the histories and social effects across media including: books, newspapers, magazines, film, radio, television and the internet. This study will investigate the conceptual dimensions of communication history by examining social, economic, cultural, and political histories of the field.

MCMA561 - Communication Social Change 561-3 Communication for Social Change. Evolution of communication and social change theories and practices; contextual factors (including aid, trade and development policies); organizations influential in formulating and implementing policy; communication intervention strategies; evolving journalism practices.

MCMA562 - Significant Studies Mass Com Res 562-3 Significant Studies in Mass Communication Research. A review of a broad selection of early literature in communication research that has provided much of the conceptual basis for empirical studies during the past two decades.

MCMA563 - Globalization & Media 563-3 Globalization and the Media. Debates about globalization from historical, theoretical, and critical perspectives. The major uses of communication technologies in international economic, political and cultural processes. Topics include regional and global trends, trade regimes, global policy bodies and policy issues; global media influence.

MCMA564 - Political Economy of Media 564-3 Political Economy of Media. Addresses the intersections of politics, economics, and social structures that underpin media arts and industries at global and national levels. Emphasizes the relationship between theories and methods.

MCMA565 - Strategic Advertising 565-3 Strategic Advertising Communication. Problem solving through strategic advertising communications and functional marketing communication, including branding, advertising, PR, sales promotion and direct response in an integrated program. The focus is on strategy and planning, and students will concentrate on integrating targets, timing and message strategy.

MCMA566 - Brand Management 566-3 Brand Management Communication. A conceptual synthesis and practical application of business, research, media and creative principles used in the formulation for a branding/advertising campaign. It includes the development of a complete integrated marketing communications (IMC) campaign for a specific brand.

MCMA568 - Social Media Theory/Practice 568-3 Social Media Theory and Practice. Explores social media from various perspectives. Topics will cover history and development of social media, social advertising/marketing, citizen journalism, social media and health communication, and other issues related to social media such as privacy, gaming, interface design, identity, etc. Students will gain hands-on experience with social media.

MCMA569 - Alt Media Power & Resistance 569-3 Alternative Media: Power and Resistance. Explores "alternative media" as counter hegemonic practice. Course examines various forms of alternative media and different meanings ascribed to them. Case studies locally and around the world demonstrate the growing relevance of alternative media in contemporary societies and the complex relationships they navigate with political and social movements, governments, the private sector, and mainstream forms of media.

MCMA582 - Game Narratives 582-3 Game Narratives. Teaches students the core ideas and practices of game narratives. It covers: a) The conceptual fundamentals of theories of game narrative design; b) The technical and organizational process of creating a narrative game. This includes designing and implementing a narrative game using an appropriate software tool. While game narrative is at the center of this course, the skills and knowledge acquired in this class are applicable to broad range of design-centric fields and contexts.

MCMA586 - Professional Media Projects 586-1 to 6 Professional Media Projects. Supervised independent media production work, the amount and exact nature of which is to be determined in consultation with MCMA faculty. More than one section may be taken in the same semester. Restricted to PMMM major or consent of instructor or director of Graduate Studies in MCMA. Lab fee: \$50.

MCMA589 - MS Report/Project 589-3 MS Report/Project. Research report or media project accompanied by abbreviated research report, directed by a minimum of one member of the graduate faculty in CMCMA. The research report, which is the synthesis of existing literature on a specific topic or the contextualization of an original media project, must be submitted to the Graduate School. Public presentation of the project required. Restricted to PMMM major.

MCMA591 - Readings 591-1 to 6 Readings. Supervised readings on subject matter not covered in regularly scheduled courses. Graduate students limited to three credits per semester. Consent of instructor.

MCMA592 - Master's Seminar 592-3 Master's Seminar. This course orients students to graduate level study in mass communication and media arts. Applied general research skills, literature reviews and proposal writing among other topics are covered. Students work on directed projects, culminating in a proposal for future research or media production. Restricted to CMCMA PMMM, MTR, or MFA major or consent of instructor or associate dean of graduate studies in Mass Communication and Media Arts.

MCMA594 - Practicum 594-3 Practicum. Study, observation and participation in activities related to the fields of Mass Communication and the Media Arts such as internships in related professional organizations. Restricted to CMCMA major.

MCMA595 - Ph.D. Proseminar 595-3 Ph.D. Proseminar. Provides PhD students in the College of Mass Communication and Media Arts a general orientation to the program. Forum for further discussion of topics and issues raised in visiting lectures scheduled through the college which students will be required to attend. Provides a framework for preparation for the annual MCMA research convention at which students will be required to present. Restricted to MCMA major or consent of instructor or associate dean of Graduate Studies in Mass Communication and Media Arts.

MCMA596 - Independent Study 596-1 to 6 (1 to 3 per semester) Independent Study. Supervised research or independent creative work, the area of study to be determined by the student in consultation with instructor. Consent of instructor.

MCMA599 - Thesis 599-1 to 6 Thesis. Thesis requirements may be satisfied only by a written thesis for an MA in Media Theory and Research and by a creative thesis for an MFA in Mass Communication and Media Arts. Minimum of three hours required for the MA in MTR degree and minimum of six hours required for MFA in MCMA. Graded S/U. Restricted to CMCMA MTR and MFA major. Only MFA thesis course carries a lab fee of \$75 per enrollment.

MCMA600 - Dissertation 600-1 to 32 (1-12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

MCMA601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours dissertation research or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Mechanical Engineering and Energy Processes

The mission of the Department of Mechanical Engineering and Energy Processes is to provide high quality engineering education to students and equip them with lifelong learning skills, which allow them to adapt to a changing work environment throughout their careers. Also, the Department of Mechanical Engineering and Energy Processes supports faculty growth and development through research and creative activities because quality teaching and service to humanity and society cannot be achieved without such activities. Finally, the Department of Mechanical Engineering and Energy Processes supports the idea of service to department, college, university, professional societies and community as part of the mission. The undergraduate program in Mechanical Engineering is accredited by the Engineering Accreditation Commission of ABET, www.abet.org. The department also offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees.

The Capstone Option for Transfer Students

The SIU Capstone Option (see chapter three) is available to students who have earned an Associate in Engineering Sciences (AES) degree with a minimum cumulative 2.0/4.0 GPA on all accredited coursework prior to the completion of the AES, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. Students interested in the Capstone Option should contact the College of Engineering Advisement Office to develop a personal coursework pathway to degree completion.

Bachelor of Science Degree in Mechanical Engineering

The fundamental goal of the undergraduate program in Mechanical Engineering is to offer a high-quality education for our students, designed to achieve the following Program Educational Objectives (PEOs), which describe what graduates are expected to attain within a few years of graduation:

1. Practice mechanical engineering in a global and societal context
2. Have skills needed for effective written and oral communication, collaboration, and innovation
3. Pursue advanced education or lifelong learning that support careers in a broad range of fields
4. Act in a professional and ethical manner, in their careers and communities

Also, the undergraduate program is designed to achieve the following Student Outcomes (SOs), which describe what students are expected to know and be able to do by the time of graduation:

1. The ability to apply knowledge of mathematics, science and engineering to problem solving
2. The ability to design and conduct experiments, as well as to analyze and interpret data
3. The ability to design a system, component, or process to meet desired needs within realistic constraints
4. The ability to function on multi-disciplinary teams
5. The ability to identify, formulate and solve engineering problems
6. An understanding of professional and ethical responsibility
7. The ability to communicate effectively
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. A recognition of the need for and an ability to engage in life-long learning
10. Knowledge of contemporary issues
11. The ability to use the techniques, skills and modern engineering tools necessary for engineering practice

Mechanical engineering is one of the broadest fields of engineering. Mechanical engineers learn measurement and instrumentation, computer-aided design, computer simulation, computer control, combustion and engine analysis. They learn to design thermal systems for mechanical and electrical equipment including heating, ventilating, air conditioning and refrigeration. Students learn how to design and produce new materials for advanced engineering applications. Courses are also offered in subjects related to the chemical processes and environmental control industries. The department offers a program leading to a Bachelor of Science degree in Mechanical Engineering. Students may choose to obtain Bachelor of Science in Mechanical Engineering with a specialization in Energy Engineering. In addition, a Minor in Energy Engineering is offered to non-Mechanical Engineering students provided they meet the requirements. Graduates are highly sought after in a variety of industries such as automotive, aerospace and manufacturing.

Bachelor of Science Degree in Mechanical Engineering, College of Engineering

Degree Requirements	Credit Hours
University Core Curriculum Requirements (should include BIOL 202, ECON 240 and MATH 150)	39
Requirements for Major in Mechanical Engineering	(9)+87
Basic Science	(6)+9
CHEM 200, CHEM 201, CHEM 210	(3)+4
PHYS 205A, PHYS 205B, PHYS 255A, PHYS 255B	(3)+5

Degree Requirements	Credit Hours
Mathematics Analysis	(3)+14
MATH 150, MATH 250, MATH 251, MATH 305	(3)+11
ENGR 351	3
Required Engineering Courses	17
ENGR 222 or ENGR 296 or ME 222	2
ENGR 250, ENGR 261, ENGR 335, ENGR 350A, ENGR 370A	15
Required ME Courses	47
ME 102, ME 300, ME 302, ME 309, ME 312, ME 336, ME 400, ME 401, ME 407, ME 411, ME 472, ME 475, ME 495A, ME 495B	38
Mechanical Engineering Elective Courses At least 6 hours must be from 400-level ME courses and 3 hours may be from IT 470A or a 400-level course used for a Math minor.	9
Total	126

Bachelor of Science Degree in Mechanical Engineering with Specialization in Energy Engineering, College of Engineering

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Major in Mechanical Engineering	(9) + 87
Basic Science	(6)+9
CHEM 200, CHEM 201, CHEM 210	(3)+4
PHYS 205A, PHYS 205B, PHYS 255A, PHYS 255B	(3)+5
Mathematics Analysis	(3)+14
MATH 150, MATH 250, MATH 251, MATH 305	(3)+11
ENGR 351	3
Required Engineering Courses	17

Degree Requirements	Credit Hours
ENGR 222B or ENGR 296	2
ENGR 250, ENGR 261, ENGR 335, ENGR 350A, ENGR 370A	15
Required ME Courses	47
ME 102, ME 300, ME 302, ME 309, ME 312, ME 336, ME 400, ME 401, ME 407, ME 411, ME 472, ME 475, ME 495A, ME 495B	38
Elective Energy Courses	9
Total	126

Minor in Energy Engineering for non-Mechanical Engineering Degrees, College of Engineering

Degree Requirements	Credit Hours
Required ME Courses	6
ME 300, ME 302 ¹	
Elective Energy Courses ²	9
Total	15

1 Prerequisite for ME 302 is ENGR 370. Equivalence for ME 300 and ENGR 370 will be considered.

2 Approved electives: ME 405, ME 406, ME 408, ME 410, ME 435, ME 440, ME 446, ME 493.

Mechanical Engineering and Energy Processes Courses

ME102 - Computer-Aided Engr Drawing 102-2 Computer-Aided Engineering Drawing. Manual sketching and computer aided engineering drawing techniques including orthographic projections, isometric projections, oblique projections, auxiliary views, and sectional views. Geometric properties and spatial relations of engineered components; design of engineering models and their appearance in the standard 2D form as well as in 3D solids; dimensioning and tolerancing as per ISO and ANSI standards; use of solid modeling software for creating relevant models at machine component and system levels; computer labs are equipped with a wide range of CAD packages currently used in the industry.

ME222 - MATLAB for ME 222-2 MATLAB Programming for Mechanical Engineers. This course provides fundamental computing principles and MATLAB programming concepts for Mechanical Engineers. Topics covered in MATLAB fundamentals, engineering computing, data import/export, 2D/3D plotting, condition statements/loops, MATLAB scripts/debugging, data fitting, solving differential equations, graphical user interface development environment, and examples of mechanical engineering problems. This course

includes a term project in which students learn how to solve various mechanical engineering problems. Prerequisite: MATH 111 or equivalent with a minimum grade of C.

ME300 - Engineering Thermodynamics I 300-3 Engineering Thermodynamics I. Study of the basic principles of thermodynamics. Engineering analysis of physical systems based on the first and second laws. Properties of pure substance (ideal gas behavior, non-ideal gas behavior, and equations of states.) Introduction to cycle analysis. Prerequisite: MATH 250, PHYS 205A.

ME302 - Engineering Heat Transfer 302-3 Engineering Heat Transfer. Fundamentals of heat transfer by conduction, convection and radiation. Applications of theory to engineering systems. Prerequisite: ME 300 and MATH 305; ENGR 370A or 370B concurrently.

ME303 - Energy Impacts 303-3 Energy: Uses and Cultural Impacts. Lectures, discussions, and class projects directed at understanding the role of energy, power, and related concepts in cultures in the past, the present, and the future. A review of current energy resources and use patterns and their impact on various cultures, as well as projections for new energy conservation techniques and the development of alternative energy technology and their cultural effects. An overview of worldwide energy needs, seeking to identify future limits on energy use attributable to environmental, economic, political, cultural, and other technological and evolutionary constraints. Prerequisite: Satisfactory completion of three hours of University Core Curriculum science requirements.

ME309 - Mechanical Analysis & Design 309-3 Mechanical Analysis and Design. The course covers kinematics and kinetics of interconnected bodies. Principles of kinematics and force analyses are applied to planar machinery. Vector loop approach is used to model mechanisms and numerical methods are employed in which a set of nonlinear equations are solved iteratively to find their displacement, velocity and acceleration. Limited coverage of design of mechanisms is presented. Prerequisite: ENGR 261; ENGR 222 or 296.

ME312 - Materials Sci Fundamentals 312-3 Materials Science Fundamentals. Sub-Microscopic Structure of solids, including electronic states, atomic and molecular, arrangement, structural imperfections and atomic diffusion, and their relationship to macro-mechanical properties. Prerequisites: PHYS 205A, MATH 250, CHEM 200, 201. Lab Supply fee: \$8.

ME336 - System Dynamics & Control 336-3 System Dynamics and Control. Modeling and simulation of mechanical, electrical, fluid and thermal systems, time domain response analysis, properties of feedback control systems, analysis and design using root-locus and frequency response methods, PID controllers. Computer-aided modeling, analysis, and design. Prerequisites: MATH 305 and ENGR 261.

ME392 - ME Co-Op Education 392-1 to 6 Mechanical Engineering Cooperative Education. Supervised work experience in industry, government or professional organization. Students work with on-site supervisor and faculty advisor. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Restricted to sophomore standing.

ME393 - Internship in Mech Engr 393-1 to 12 Internship in Mechanical Engineering. Credit for documented work experience as an intern in an engineering occupation or an engineering-related occupation. Work assignments must have been professional service in the mechanical engineering field. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: satisfactory completion of twelve hours of Engineering and/or Mechanical Engineering courses.

ME400 - Engr Thermodynamics II 400-3 Engineering Thermodynamics II. Combined first and second law analysis: Exergy analysis; Analysis of power and refrigeration cycles. Detailed treatment of gas and vapor cycles including gas and steam cycles; Thermodynamics of combustion and reaction of mixtures; Introduction to thermodynamic property relations, chemical and phase equilibrium. Prerequisite: ME 300.

ME401 - Thermal Measurements Lab 401-1 Thermal Measurements Laboratory. Study of basic measurements used in the thermal sciences. Calibration techniques for temperature and pressure sensors. Thermal measurements under transient and steady-state conditions. Applications include conduction, convection and radiation experiments. Uncertainty analysis. The handling and reduction of data. Prerequisite: ME 302.

ME405 - Transportation Power Systems 405-3 Transportation Power Systems. Operation and performance characteristics of Otto, Diesel, Atkinson cycles. Methods of engine testing, types of fuels and their combustion, exhaust gas analysis. Types, selection, and analysis of jet engines. Analysis of fuel cell types, their performance and limitations. Operation of electric motors, capacitors, battery packs and their charging. Prerequisite: concurrent enrollment in or completion of ME 400, with a minimum grade of C or consent of instructor.

ME406 - Thermal Systems Design 406-3 Thermal Systems Design. Applications of the principles of engineering analysis to the design of thermal systems. Coordination of such systems as heat exchangers, air conditioners, cogeneration cooling towers, and furnaces. Emphasis is placed on application of basic principles of heat transfer and fluid mechanics. Prerequisite: ME 302.

ME407 - Measurements & Instrumentation 407-2 Measurements and Instrumentation. Measurements of displacement, velocity, frequency, pressure, force, vibration, and flow rate. Data acquisition and analysis. System parameter identification. Team execution of experiments; technical report writing; data presentation using figures and tables. Prerequisite: ME 336.

ME408 - Energy Conversion Systems 408-3 Energy Conversion Systems. Principles of advanced energy conversion systems; nuclear power plants, combined cycles, magnetohydrodynamics, cogeneration (electricity and process steam), and heat pumps. Constraints on design and use of energy conversion systems; energy resources, environmental effects, and economics. Prerequisite: ME 400.

ME410 - Appl Chem Thermo & Kinetics 410-3 Applied Chemical Thermodynamics and Kinetics. Designed for students interested in chemical and environmental processes and materials science. Topics covered include application of the Second and Third Laws of Thermodynamics, solution theory, phase equilibria, sources and uses of thermodynamic data, classical reaction rate theory, kinetic mechanisms and the determination of rate-determining steps in chemical reactions. Prerequisite: CHEM 200, 201, ME 300 or consent of instructor.

ME411 - Mnfg Methods: Engr Matls 411-3 Manufacturing Methods for Engineering Materials. Overview of manufacturing processes with emphasis on the fabrication of materials from the processing and equipment viewpoint. This course presents a broad study of the many manufacturing processes utilized in the production of a wide variety of products and components. Insight into the multitude of processing factors which influence the practical design of manufactured parts to achieve the advantages of maximum economy, accuracy and automation in everyday production. Prerequisite: ME 312 and ENGR 350A.

ME415 - Engineering Acoustics 415-3 Engineering Acoustics. Principles of engineering acoustics and their applications to passive and active noise control techniques. Laboratory experience demonstrates techniques for control and reduction of noise. Prerequisite: ME 336.

ME416 - Air Pollution Control 416-3 Air Pollution Control. An overview of problems in air pollution likely to influence the Mechanical Engineer. Engineering control theory, procedure and equipment related to control of particulate, gaseous, and toxic air emissions. Restricted to senior standing and College of Engineering or consent of instructor.

ME421 - Pneumatic Hydraulic Engr 421-3 Pneumatic Hydraulic Engineering. Design principles of fluid power engineering. The behavior of fluids in a system. Analysis and design of hydraulic and pneumatics machinery and systems using fluid as a medium for transmission of power and control of motion. Analysis of steady state and dynamic behavior. Critical operations and analysis.

ME422 - Appl Fluid Mechanics for ME 422-3 Applied Fluid Mechanics for Mechanical Engineers. Applications of fluid mechanics in internal and external flows. The mathematical basis for inviscid and viscous flows calculations is developed with application to pipe and duct flows; external flow about bodies; drag determination; turbomachinery; and reaction propulsion systems. Semester design project of a fluid mechanical system. Prerequisite: ME 300 and MATH 305; ENGR 370A or 370B concurrently.

ME423 - Compressible Flows 423-3 Compressible Flows. Foundation of high speed fluid mechanics and thermodynamics. One-dimensional flow, isentropic flow, shock waves and nozzle and diffuser flows. Flow in ducts with friction and heat transfer. Prandtl-Meyer flow. Compressibility effects in reaction propulsion systems. Semester design project. Prerequisite: ME 300; ENGR 370A or 370B concurrently.

ME435 - Des:Mass Transfer Processes 435-3 Design of Mass Transfer Processes. Design principles of mass transfer processes. The rate mechanism of molecular, convective and interphase mass diffusion. The design of selected industrial mass transport process operations such as absorption, humidification, water-cooling, drying and distillation. Prerequisite: ME 302.

ME440 - Design HVAC & Build Energy Sys 440-3 Design of HVAC and Building Energy Systems. Building energy design and simulation; HVAC systems, heating and cooling load analysis; Air conditioning processes; Principles of human thermal comfort. Prerequisite: ME 302. Restricted to graduate standing or consent of the instructor.

ME446 - Energy Management 446-3 Energy Management. Fundamentals and various levels of analysis for energy management of commercial buildings and industrial processes and buildings. Use of energy management systems and economic evaluations are required in course projects. Prerequisite: ME 302.

ME449 - Mechanics of Adv Materials 449-3 Mechanics of Advanced Materials. Mechanical behavior of composite materials, cellular materials, functionally graded materials. Constitutive equations for the linear and nonlinear ranges, failure theories, fracture mechanics. Application to the design of composite and sandwich structures, pressure vessels, shafts, armor under static loading, impact and blast loading. Prerequisite: ENGR 261; ENGR 350A or 350B concurrently.

ME451 - Advanced Dynamics 451-3 Advanced Dynamics. Three-dimensional kinematics and dynamics of particles and rigid bodies; Coordinates and reference frames; Rotations of rigid bodies; Euler angles; Newtonian mechanics; Work and energy; Generalized coordinates and degrees of freedom; Analytical mechanics with a focus on Lagrange's equations; Hamilton's principle for continuous elastic systems. Prerequisites: MATH 305 and ME 309 with a grade of C or better or graduate standing.

ME463 - Introduction to Ceramics 463-3 Introduction to Ceramics. Structure and physical properties, mechanical properties, processing and design of ceramics. Prerequisite: ME 312 or equivalent.

ME465 - Intro to Nanotechnology 465-3 Introduction to Nanotechnology. Survey of the rapidly developing fields of nanometer science and engineering. Impact on society; principles of self-assembly; production and properties of nano-materials; cell mechanism as a model for assemblers; nano-tools; and nano-systems are explored. Prerequisite: CHEM 210.

ME468 - Friction Science & Apps 468-3 Friction Science and Applications. Study of systems and materials used for friction applications with a focus on aerospace and ground transportation vehicles. Course covers theories and experimental methods regarding friction and wear, contact mechanics, friction materials, vibration and noise, thermal transport and thermo-elastic phenomena. The course approach uses a materials emphasis. Prerequisite: ME 312. Restricted to senior standing or consent of instructor.

ME470 - Mech System Vibrations 470-3 Mechanical System Vibrations. Linear vibration of mechanical systems; System modeling; Free and forced response of single degree of freedom systems; Lagrange's equations; Multi-degree of freedom systems; Modal analysis for response calculations; Vibration of continuous systems. Prerequisite: ENGR 261, ENGR 351, MATH 305.

ME472 - Materials Selection for Design 472-3 Materials Selection for Design. Interaction of material design process with material selection criteria. Comparison of materials properties, processes and fabrication. Project work includes design models, materials selection rationale, oral presentation of projects, construction of mock-up models, and theoretical design problems in the area of the student's specialization, including materials selection considerations for biomaterials/biomedical applications. Prerequisite: ENGR 222 and ME 312.

ME475 - Machine Design I 475-3 Machine Design I. Design of machines using bearings, belts, clutches, chains and brakes. Develops application of the theory of fatigue, power transmission and lubrication to the analysis and design of machine elements. Prerequisite: ENGR 351; ENGR 350A or 350B concurrently.

ME477 - Fund Comp Aid Des & Manf 477-3 Fundamentals of Computer-Aided Design and Manufacturing. Introduction to the concepts of computer-aided design and manufacturing (CAD/CAM). Subjects include computer graphics, geometric modeling, engineering analysis with FEM, design optimization, computer numerical controls, project planning, and computer integrated manufacturing.

(CIM). Students are required to use computer packages for projects. Prerequisite: ME 475 or consent of instructor.

ME478 - FEA in CAD 478-3 Finite Element Analysis in CAD. Course to cover a multitude of topics in CAD/CAE with emphasis on finite element modeling and analysis. Overview of CAD/CAM/CAE; FEA software; FEA problems including trusses, beams, frames, thermal analysis, and fluid mechanics; design optimization; rapid prototyping. Students are required to use FEA software for homework assignments and a design project. Prerequisite: ME 302. Co-requisite: ME 475.

ME480 - Computational Fluid Dynamics 480-3 Computational Fluid Dynamics. Application of computational fluid dynamics techniques to the solution of problems in engineering heat transfer and fluid flow. Discretization techniques; stability analysis. Introduction to grid generation. Prerequisite: ENGR 351, ENGR 370A (or 370B concurrently); ME 302 or consent of instructor.

ME481 - Design/Implement Vision System 481-3 Design and Implementation of Vision System. (Same as BME 481) This course provides an introduction to a vision system and instrumentation with engineering applications including optical microscopy. A vision system is an essential tool in most of the application, and optical microscopy is a powerful scientific tool to study microscale worlds. Topics covered in basic geometrical optics, Optoelectronic devices, basic electronics for illumination system, optical microscopy, actuators in the microscope, fundamentals of fluorescence microscopy, and advanced imaging techniques. Prerequisites: ENGR 296 or ME 222 or consent of instructor.

ME485 - Cell & Molecular Biomechanics 485-3 Cellular and Molecular Biomechanics. (Same as BME 485) Mechanics at the micron and nanoscale level relevant to living cells. Molecular forces, bond dynamics, force induced protein conformational changes. Structural basis of living cells; contractile forces; mechanics of the biomembranes, the nucleus, the cytoskeletal filaments- actin, microtubule, intermediate filaments. Active and passive rheology techniques; microrheological properties of the cytoskeleton. Active cellular processes such as cell adhesion, cell spreading, control of cell shape, and cell migration. Discussion on the experimental techniques including single molecule approaches to understand these key cellular processes. Discussion on theoretical models that predict these cellular processes and their limitations. Introductory concepts of mechanobiology will be discussed. Prerequisites: ENGR 350A or 350B with a minimum grade of C or better; or graduate standing.

ME486 - Nondestructive Eval Engr Matls 486-3 Nondestructive Evaluation of Engineering Materials. (Same as CE 486) Overview of common nondestructive evaluation (NDE) techniques, such as visual inspection, eddy current, X-ray, and ultrasonics, to measure physical characteristics of and to detect defects in engineering materials. Laboratory experiments include contact ultrasonic, magnetic particle, liquid penetrant, and infrared thermography methods of testing. Prerequisite: ME 312 with a grade of C or better.

ME492 - Special Problems in Engr 492-1 to 5 Special Problems in Engineering. Engineering topics and problems selected by either the instructor or the student with the approval of the instructor. Five hours maximum course credit. Not for graduate credit. Restricted to senior standing. Special approval needed from the instructor.

ME493 - Materials in Energy 493-3 Materials in Energy Applications. Materials are central to every energy technology. The course will provide information on high performance materials for alternative energy technologies and developing a fundamental understanding of their structure-property-performance relationships. It will include materials for fuel cells, lithium ion batteries, supercapacitors, photovoltaics, solar energy conversion, thermoelectrics, and hydrogen production and storage, catalysts for fuel conversion. Prerequisite: ME 312.

ME495A - Mechanical Engr Design 495A-3 Mechanical Engineering Design. Project development skills, feasibility and cost-benefit analysis, ethical issues, professionalism, preliminary design, identification of tasks, assignment of tasks to project team members, coordination of interdisciplinary team effort, development of final proposal, oral presentation of final proposal. Not for graduate credit. Prerequisite or concurrent enrollment in: ENGR 351; ME 400; one ME elective. Restricted to senior standing in ME.

ME495B - Mechanical Engr Design 495B-3 Mechanical Engineering Design. Development of the final design, hardware implementation of the final design (if the project warrants), documentation of all stages of design, project coordination, documentation of the testing and evaluating of the design, cost

estimating, scheduling, and written, oral, and poster presentation of the final design. Not for graduate credit. Prerequisite: ME 495A (last semester).

ME500 - Advanced Engr Thermodynamics 500-3 Advanced Engineering Thermodynamics. Creating computer programs to solve complex problems in thermodynamics relating to vapor power cycles, gas power cycles, refrigeration cycles, and psychrometric evaluations. Advanced thermodynamic relations involving equations of state. Chemical and phase equilibrium. Prerequisite: ME 400 or graduate standing or consent of instructor.

ME501 - Transport Phenomena 501-3 Transport Phenomena. Mechanism of heat, mass and momentum transport on both molecular and continuum basis. Estimation of transport properties. Generalized transport equations in one- or three-dimensional systems. Analogy of mass, heat and momentum transfer. Macroscopic balances, simultaneous mass and heat transfer. Prerequisite: ME 302.

ME502 - Conduction Heat Transfer 502-3 Conduction Heat Transfer. Engineering considerations involving the construction of mathematical and numerical models of conduction heat transfer and the interpretation of results of analyses. Prerequisite: ME 302.

ME503 - Convective Heat Transfer 503-3 Convective Heat Transfer. Laminar and turbulent forced convection heat transfer over surfaces and inside tubes, including non-circular cross sections. Developing flows. Laminar free convection. Emphasis throughout is on the analytical approach. Prerequisite: ME 302.

ME504 - X-Ray Diff & Elect Micro 504-3 X-Ray Diffraction and Electron Microscopy. (Same as PHYS 571A) X-ray physics. Geometry of crystals. Scattering of X-ray by atoms, crystals and noncrystalline matter. Kinematical theory of diffraction. Powder method, Laue method. Electron optics. Formation and analysis of diffraction patterns. Imaging techniques. Image contrast theories. Analysis of crystal defects. Advanced analytical electron microscopes. Special approval needed from the instructor.

ME505 - Vehicle Dynamics 505-3 Vehicle Dynamics. To provide an introductory coverage of dynamics of vehicle systems. The topics include mainly automotive systems but others such as aircraft and train systems may be discussed. Students will become familiar with issues related to tire behavior, vehicle suspension design, steering, vehicle and load transfer. Prerequisite: ENGR 261.

ME507 - Combustion Phenomena 507-3 Combustion Phenomena. Basic combustion phenomena-chemical rate processes-flame temperature, burning velocity, ignition energy, quenching distance and inflamability limits-laminar and turbulent flame propagation-aerodynamics of flame-gaseous detonations-two phase combustion phenomena-fluidized bed combustion. Prerequisite: ME 300.

ME508 - Nanoscale Heat Transfer 508-3 Nano/Microscale Energy and Heat Transfer. Review of limitations of macroscopic energy transport models; Energy transport and conversion mechanisms at the micro/nano/molecular scale; Energy transfer in nanostructured energy devices; Related topics on the transport of electrons, phonons and molecules; Molecular Dynamics simulation. Restricted to graduate standing or consent of the instructor.

ME509 - Radiation Heat Transfer 509-3 Thermal Radiation Heat Transfer. Review of radiation fundamentals. Prediction of radiative properties using classical electromagnetic theory. Properties of real materials. Governing equations between blackbody and graybody surfaces. Exchange of radiation between nondiffuse, nongray surfaces. Radiation in the presence of other energy transfer modes. Approximate and computer solution techniques. Prerequisite: ME 302.

ME525 - Small Particle Phenomena 525-3 Small Particle Phenomena. Small particle formation, behavior, properties, emission, collection, analysis and sampling. Includes atomization, combustion, transport of suspension and sols, filtration, light scattering and movement patterns of mono and polydisperse particles and use of a device to measure size, size distribution and one other physical property of an aerosol. Restricted to graduate standing.

ME531 - Reaction Engineering 531-3 Reaction Engineering and Rate Processes. Chemical kinetics of homogeneous and heterogeneous reactions, kinetic theories, mechanism and mathematical modeling. Reactor design. Design of multiple reactions; temperature and pressure effects. Nonisothermal and nonadiabatic processes. Non-ideal reactors. Prerequisite: ME 435.

ME535 - CAD of Mechanical Systems I 535-3 Computer Aided Analysis of Mechanical Systems I. Computer aided kinematic and dynamic analysis of planar mechanism: topics will include formulation of kinematic and dynamic equations of motion for planar systems. Automatic generations of kinematic constraint such as revolute joint, translation joint, etc. Numerical techniques for solution of nonlinear, differential, and algebraic equations, application of these techniques to planar mechanism and robotic systems. Prerequisite: ME 309.

ME537 - Nonlinear Vibrations 537-3 Nonlinear Vibrations. Dynamic response and stability of nonlinear systems. Examples and sources of nonlinearity. Various techniques for studying dynamic behavior or nonlinear systems. Prerequisite: ME 470 or consent of instructor.

ME538 - Appld Optml Des/Cont Dyn 538-3 Applied Optimal Design and Control of Dynamic Systems. Unconstrained and Constrained Mechanical-System Optimization Problems; Variational Calculus; Continuous Optimal Control; The Maximum Principle and Hamilton-Jacobi Theory; Dynamic-Systems Optimum-Control Examples; Design Sensitivity Analysis; Numerical Methods for Dynamic-System Design and Control Problems; Application of the above techniques to Large Scale Dynamic Systems. Prerequisite: ME 470 or equivalent.

ME539 - Catalysis 539-3 Catalysis in Energy Processes. This course spans the full range from fundamentals of kinetics and heterogeneous catalysis via modern experimental and theoretical results of model studies to their equivalent large-scale energy processes. Several processes are discussed including hydrogen production, fuel cells, liquid fuel synthesis. Prerequisite: ME 410 or consent of instructor.

ME540 - Intro to Continuum Mechanics 540-3 Introduction to Continuum Mechanics. Tensor analysis applied to continuum mechanics: stress and strain and their invariance, equations of compatibility, constitutive equations - including linear stress-strain relations. Prerequisite: ENGR 350A, MATH 305. Restricted to graduate standing in engineering.

ME545 - Intelligent Control 545-3 Intelligent Control. Techniques to design and develop intelligent controllers for complex engineering systems. Specific techniques covered are fuzzy logic, expert systems, genetic algorithms, simulated annealing and any combinations of these. Prerequisite: ME 336 or consent of instructor.

ME549 - Wave Prpgtn, Impct & Explsns 549-3 Wave Propagation, Impact and Explosions. This course will deal with the dynamic response of materials and structures to dynamic events with particular emphasis on crashes, impacts and explosions. Prerequisite: ENGR 261 or consent of instructor.

ME550 - Contact Mechanics 550-3 Contact Mechanics. Course covers fundamentals of mechanics of elastic and inelastic solids in contact. Although the primary focus is on elastic contact, topics involving plastic flow, thermo-elastic effects and contact of rough surfaces are included in the content. Restricted to graduate standing.

ME551 - Advanced Vibration 551-3 Advanced Vibration. Analytical techniques for the vibration of discrete, continuous, and hybrid discrete-continuous systems; Vibration of conservative and nonconservative systems with focus on their representation in terms of linear operators; Properties of vibrating systems; Discretization methods for the analysis of continuous and nonlinear systems; Vibration and stability of gyroscopic systems. Prerequisite: ME 470 with a grade of C or better or graduate standing.

ME555 - Materials Processing 555-3 Materials Processing. Course to cover a multitude of topics in the processing of metals, ceramics and, to a lesser extent, polymers. Examples are: materials beneficiation, extraction, solidification, sintering and thin film deposition; topics for which the scientific basis for the processes is well established. Prerequisite: ME 312 and 410 or consent of instructor.

ME562 - Envr Degradation of Materials 562-3 Environmental Degradation of Materials. Course designed for majors in engineering and the physical sciences. Topics covered include general corrosion, oxidation, hydrogen embrittlement, stress corrosion cracking and fine particle erosion. Approach will draw on principles of chemistry and materials science. Prerequisite: CHEM 200 and CHEM 210, ME 312, or consent of instructor.

ME564 - Ceramic Materials Electronics 564-3 Ceramic Materials for Electronics. Ceramic materials contribute essential passive functions as components for a wide range of electronic applications related to sensors and energy converters. Ceramic material's electronic properties, electronic and ionic conduction in ceramic oxides; processing, properties and applications of ceramic materials for electronics, solid-oxide fuel cells, properties, fabrication and performance will be covered in this course. Prerequisite: ME 312, 463 or consent of instructor.

ME565 - Finite Element Analysis 565-3 Finite Element Analysis. (Same as CE 551) Finite element analysis as a stress analysis or structural analysis tool. Derivation of element stiffness matrices by various means. Application to trusses, plane stress/strain and 3-D problems. Dynamic and material nonlinearity problems. Restricted to graduate standing in engineering or consent of instructor.

ME566 - Advanced Mechanics-Materials 566-3 Advanced Mechanics of Materials. (Same as CE 557) Advanced topics in mechanics of materials including: elasticity equations; torsion of non-circular sections; generalized bending including curved beams and elastic foundations; shear centers; failure criteria including yielding, fracture and fatigue; axisymmetric problems including both thick and thin walled bodies; contact stresses; and stress concentrations. Restricted to graduate standing in engineering or consent of instructor.

ME567 - Tribology 567-3 Tribology. Analysis and design of tribological components particularly bearings. A number of modern developments in the field and advanced topics will be presented. Restricted to graduate standing or consent of instructor.

ME568 - Alt Energy & Fuel Resources 568-3 Alternative Energy and Fuel Resources. The course covers the alternatives for energy resources and the impact of the human growth on the energy usage and its environmental consequences. The course describes the fossil fuel era, renewable energy resources, and hydrogen fuel era. The fundamentals of each of these fuel types, their conversion to usable energy and the potential of each of these fuels for the future is discussed. Prerequisite: ME 300 and 400, or instructor's consent.

ME569 - Non-Destructive Evaluation 569-3 Non-Destructive Evaluation. Course to cover a multitude of topics in non-destructive evaluation (NDE) techniques with emphasis on recent advancements in the field. Introduction to the field of NDE. Overview of common NDE techniques, such as visual inspection, eddy current, X-ray and ultrasonics. Recent development and research areas in NDE.

ME577 - Bioprocess Engineering 577-3 Bioprocess Engineering. (Same as BME 577) This course introduces the Mechanical and/or the Biomedical Engineer to the applications of bioprocesses to biotechnology, bacterial cell cultivation, animal cell cultivation, plant cell cultivation and medical applications bioprocessing. Attention will be given to a short survey of the working cells and reactors for cell growth, but will be an overview in nature. Restricted to graduate student standing.

ME580 - Seminar 580-1 Seminar. Presentations of topics in the broad areas of mechanical engineering such as thermal, mechanics, materials and acoustics. Restricted to enrollment in program leading to Master of Science of Mechanical Engineering.

ME582 - Experimental Research Tools 582-1 Experimental Research Tools. Topics important to engineering graduate students engaging in research. These topics include: laboratory safety, statistical data analysis, experimental design, library research and chemical hygiene. Restricted to graduate enrollment in Engineering.

ME583 - Technical Research Reporting 583-1 Technical Research Reporting. Analysis of technical and scientific writing: journal article, thesis, research paper. Guidelines and principles for writing engineering research literature and proposals. Term project involving thesis or research paper proposal to meet department requirements. Prerequisite: ME 582. Special approval needed from the instructor.

ME592 - Special Investigations in ENGR 592-1 to 4 Special Investigations in Engineering. Advanced topics in thermal and environmental engineering. Topics are selected by mutual agreement of the student and instructor. Four hours maximum course credit. Special approval needed from the instructor and department chair.

ME593 - Spec Topics in Mech Engr 593-3 Special Topics in Mechanical Engineering. Studies of special topics in various areas in mechanical engineering. Such topics as coal refining, energy conversion, thermal systems, mechanics, robotics, CAD/CAM, TOM and engineering materials. Special approval needed from the instructor.

ME595 - Research Paper 595-3 Research Paper. Research paper on a topic approved by a faculty advisor and committee in Mechanical Engineering. This course is restricted to graduate students in the non-thesis option. Restricted to graduate standing in Mechanical Engineering. Special approval needed from the instructor or department.

ME599 - Thesis 599-1 to 6 Thesis. Six hours maximum course credit.

ME601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Mechanical Engineering and Energy Processes Faculty

Abrate, Serge, Professor, Ph.D., Purdue University, 1983.

Agrawal, Om P., Professor, Ph.D., University of Illinois at Chicago, 1984.

Chai, Tan, Assistant Professor, Ph.D., Ohio State University, 2013.

Chen, Juh W., Professor, Emeritus, Ph.D., University of Illinois, 1959.

Chowdhury, Farhan, Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign, 2011.

Chu, Tsuchin, Professor, Ph.D., University of South Carolina, 1982.

Cooley, Christopher G., Assistant Professor, The Ohio State University, 2012.

Don, Jarlen, Professor, Ph.D., Ohio State University, 1982.

Esmaeli, Asghar, Professor, Ph.D., The University of Michigan, 1995.

Farhang, Kambiz, Professor, Ph.D., Purdue University, 1989.

Filip, Peter, Professor, Ph.D., Technical University, Ostrava, 1989.

Hippo, Edwin J., Professor, Emeritus, Ph.D., Pennsylvania State University, 1977.

Kent, Albert C., Professor, Emeritus, Ph.D., Kansas State University, 1968.

Kim, Dal Hyung, Assistant Professor, Ph.D., Drexel University, 2013.

Koc, Rasit, Professor and Chair, Ph.D., University of Missouri-Rolla, 1989.

Mathias, James A., Associate Professor, Ph.D., Ohio State University, 2001.

Mondal, Kanchan, Professor, Ph.D., Southern Illinois University, 2001.

Nsofor, Emmanuel C., Professor, Ph.D., Mississippi State University, 1993.

O'Brien, William S., Associate Professor, Emeritus, Ph.D., West Virginia University, 1972.

Orthwein, William, Professor, Emeritus, Ph.D., University of Michigan, 1959.

Rajan, Suri, Professor, Emeritus, Ph.D., University of Illinois, 1970.

Suni, Ivar Ian, Professor, Ph.D., Harvard, 1992.

Swisher, James H., Professor, Emeritus, Ph.D., Carnegie-Mellon University, 1963.

Tempelmeyer, Kenneth E., Professor, Emeritus, Ph.D., University of Tennessee, 1969.

Wiltowski, Tomasz, Professor, Ph.D., Institute of Catalysis and Surface Chemistry, 1982.

Wittmer, Dale E., Professor, Emeritus, Ph.D., University of Illinois, 1980.

Wright, Maurice, Professor, Emeritus, Ph.D., University of Wales, 1962.

MEDPREP

Medical/Dental Education Preparatory Program

MEDPREP is a post baccalaureate program within the Southern Illinois University School of Medicine. Courses are restricted to MEDPREP students only. Admission to MEDPREP is by direct application to the program. Contact the MEDPREP admissions coordinator for information.

MEDPREP Courses

MEDPREP Faculty

Bardo, Harold R., Director, Emeritus, Ph.D., Southern Illinois University, 1972.

Bondzi, Cornelius., Instructor, Microbiology and Immunology, Ph.D., Virginia Commonwealth University, 2000.

Chaklos, Mary S., Instructor, Emerita, Chemistry and Biochemistry, Ph.D., Southern Illinois University, 1979.

Gary, Mallory, Instructor, Health Education, Ph.D., Southern Illinois University Carbondale, 2012.

Henry, Paul, Associate Professor, Emeritus, Counselor Education/Educational Psychology, Ph.D., Southern Illinois University, 1982.

Herrold, Linda K., Instructor, Assistant Dean, Student Affairs, Emerita, School of Medicine, Mathematics, M.S., Southern Illinois University, 1990.

Jackson, Evelyn W., Associate Professor, Emerita, Education/Reading, Ph.D., Southern Illinois University, 1975.

Jones, Kathleen A., Instructor, Educational Administration Higher Education, Ph.D., Southern Illinois University, 2016.

Metz, Anneke, Interim Director, Biochemistry, Ph.D., University of Texas Austin, 1998.

Paul, Gina, Associate Professor, Education/Reading, Ph.D., Southern Illinois University, 2001.

Szary, Barbara, Instructor, Immunology, Emerita, Ph.D., Institute of Immunology and Experimental Therapy, Poland, 1977.

Weilbaecher, Rodney, Research Assistant Professor, Molecular and Cellular Physiology, Ph.D., University of California Berkeley, 1997.

Management

Management is the art of decision-making, supervision and strategic planning for effective use of physical and human resources to achieve high performance. The curriculum provides a broad exposure to the key functions of management. It helps develop technical, technological and human resource management skills needed in modern enterprises. The management curriculum develops valuable methods, tools, techniques and skills while emphasizing creative thinking and problem solving. Students can satisfy the general requirements of a management major and direct their programs of study toward several career tracks. These specializations include: General Management, Entrepreneurship, Supply Chain Management, Personnel Management, and Management of Health-Care Enterprises.

General Management. Managers make and implement decisions through and with people working together toward common goals. The Curriculum focuses on the organizational and environmental factors that influence individuals and groups, particularly in work settings. This includes developing leadership, organizational and behavioral skills that support high performance organizations.

Entrepreneurship. Entrepreneurship is the initiation and management of a new venture or revitalizing an existing firm. This specialization explores the special problems associated with starting a new venture and operating an independent, and often small, business venture.

Supply Chain Management. In today's global competitive environment, organizations must efficiently manage the flow of materials, goods, services, and information throughout the value chain, from suppliers to customers. Customers require high quality products and services at competitive prices, when they want them, where they want them. Supply Chain Management ensures the smooth flow of materials and efficient transformation of various inputs into goods and services while maintaining high quality.

Personnel Management. The Personnel Management specialization trains students in managerial strategies and programs for making the most effective use of the skills and abilities of organizational personnel. It considers processes such as employee selection, training, career development, diversity, motivation, team-work, and performance appraisal, as well as the impact of cultural, environmental, social, and legal influences on managerial practice.

Management of Health-Care Enterprises. This specialization focuses on the application of sound principles of management and leadership to the effective operation of health care facilities and health service organizations. It focuses on general principles of individual, group, and organizational effectiveness and the application of those principles to the unique societal, structural, legal, and political challenges faced by the health care field.

Students in the five specializations in management prepare for career opportunities in both profit and non-profit, service and manufacturing organizations. The flexibility provided by our five specializations creates a wide variety of employment opportunities. Additionally, students may seek careers as consultants with any of the various consulting firms.

A specialization in General Management provides students with an excellent background for entry-level positions as management trainees, supervisors, personnel specialists, or human resource coordinators.

A specialization in Entrepreneurship provides training in the basics of small business management, marketing and financial planning and budgeting. These skills are necessary for starting and running small businesses, franchise operations and family concerns.

A specialization in Supply Chain Management prepares students for entry-level positions as operations supervisors, operations schedulers, logistics planners, or buyers.

A specialization in Personnel Management prepares students for positions such as personnel manager, recruiter, or director of personnel.

A specialization in Management of Health-Care Enterprises can prepare students for many different possible positions in health-care organizations or in companies that do business with health-care organizations. These could include office manager, assistant administrator, or project coordinator.

Students majoring in other areas such as accounting, finance, or marketing can obtain a double major in management that will facilitate upward mobility in their careers.

A major in Management* (as described below) requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for the Management major, and students must earn a minimum 2.0 grade point average for those major courses. Additionally, for prerequisite purposes for all MGMT-numbered courses having a MGMT-numbered course as a prerequisite: a student must have a grade of C or better in each MGMT-numbered prerequisite course including ACCT/FIN/MGMT 208.

The Capstone Option for Transfer Students

The Capstone Option is available to students who have earned an Associate in Applied Science (AAS) degree or have the equivalent and who have a cumulative 2.0/4.0 gpa on all accredited coursework prior to the completion of the AAS, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. See the Capstone Option section for more information on this option. Students who apply for the Capstone Option will work with the College of Business Advisement Office for approval of the Capstone Option and will complete a personal contract for a degree completion plan.

Differential Tuition

The College of Business assesses College of Business majors a differential tuitions surcharge of 15% of applicable tuition for declare College of Business majors. The College of Business has a “minor program fee” for other than College of Business majors that is equal to 15% of 15 credits hours of applicable tuition for declared College of Business minors.

Specializations:

General Management - Entrepreneurship - Supply Chain Management - Personnel Management - Management of Health-Care Enterprises

Bachelor of Science Degree in Management, College of Business

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Professional Business Core	47
Requirements for Major in Management*	21
*Minimum grade of C required for all classes in major area. Management Core MGMT 341, MGMT 380, MGMT 483	9
Specialization (Choose one)	12
General Management: Select four: MGMT 352, MGMT 385, MGMT 420, MGMT 431, MGMT 446, MGMT 474, MGMT 485, MGMT 495	
Entrepreneurship: FIN 350, MGMT 350, MGMT 471; select one: MGMT 420, MGMT 422, MGMT 431, MGMT 495	
Supply Chain Management: MGMT 352, MGMT 452; select two: MGMT 420, MGMT 456, MGMT 495, IMAE 465, IMAE 470A, IMAE 470B	
Personnel Management: MGMT 385; select three: MGMT 352, MGMT 431, MGMT 474, MGMT 485, MGMT 495, PSYC 307, PSYC 420	
Management of Health-Care Enterprises: MGMT 385, HCM 360; select two: MGMT 420, MGMT 474, MGMT 485, MGMT 495, HCM 384, HCM 385, HCM 388, HCM 420	
Electives ¹	13
Total	120

1 120 semester hours are required for graduation. Any additional hours of college level credit can be used to equal minimum 120 semester hours required for degree.

Management Minor

For College of Business majors, a minor in Management consists of a minimum of 15 semester hours, including MGMT 345 and 12 approved credit hours in Management at the 300 level or above. MGMT 304,

MGMT 318, and MGMT 481 are not eligible for a minor in Management for College of Business majors. For non-College of Business majors, a minor in Management consists of a minimum of 15 semester hours, including MGMT 304, MGMT 318, MGMT 345 and six credit hours in Management at the 300-level or above. An advisor within the College of Business must be consulted before selecting Management as a minor. At least nine of the 15 semester hours must be taken at Southern Illinois University Carbondale. All prerequisites for the Management minor classes must be satisfied.

A minor from the College of Business requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for their minor, and students must earn a minimum 2.0 grade point average for those minor courses.

Management Courses

MGMT170 - Intro to Business 170-3 Introduction to Business. Survey of business. General knowledge of the modern business world, the composition and functions of the business organization, as well as business as a social institution. Does not satisfy a College of Business requirement. Restricted to freshmen and sophomores.

MGMT202 - Business Communications 202-3 Business Communications. Creating and managing written and oral administrative communications including the analysis, planning and practice of composing different types of internal and external communications in various administrative and business contexts. Prerequisite: ENGL 101 or ENGL 102.

MGMT208 - Business Data Analysis 208-3 Business Data Analysis. (Same as ACCT 208 and FIN 208) [IAI Course: BUS 901] Uses of data in policy formulation are discussed. Emphasis is placed on the conversion of raw information into statistics, which are useful to the decision-maker. Problems stress solution to questions typically raised in businesses. Prerequisite: MATH 139.

MGMT304 - Intro to Management 304-3 Introduction to Management. Basic concepts of the administrative process are considered with emphasis on executive action to develop policy, direction, and control based on traditional and behavioral science approaches to decision making. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT318 - Production-Operations Mgmt 318-3 Production-Operations Management. This course is an introduction to the design, planning, and control of manufacturing and service operations. Topical coverage includes operations strategy, process management, project management, Total Quality Management, and Just-in-time/Lean Operations, as well as traditional techniques for facility location, layout, and inventory management. Prerequisite: MATH 139 or MATH 140, ACCT/FIN/MGMT 208. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT341 - Organizational Behavior 341-3 Organizational Behavior. The study of behavioral issues in management, including analyses of individual, group, and intergroup relations under a broad range of organizational settings. Includes discussion of theory, cases, and managerial applications. Prerequisites: MATH 139; ACCT/FIN/MGMT 208 and MGMT 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT345 - Computer Information Systems 345-3 Computer Information Systems. Integrates topics of management and organization, information systems, and information technology. Emphasizes organizational planning, analysis, design, and implementation of information systems to aid in knowledge work. Application of information technology to solve business problems. Hands-on problem solving in Excel and Access. Restrictions: College of Business majors or minors, junior standing.

MGMT350 - Small Business Mgmt 350-3 Small Business Management. Identification of small business, its importance and relationship to the United States economy, and the opportunities and requirements unique to operation and management. Personal characteristics, interpersonal relationships, organizational systems, and decision-making processes are examined for their contribution to the success or failure of the firm. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT352 - Management Science 352-3 Management Science. This course is an introduction to mathematical model building. The focus of this course is on modeling business problems and the solution techniques commonly used to solve such models. Topical coverage includes decision theory, mathematical programming, network models, scheduling models, queuing models, and simulation. Prerequisite: MATH 139, MATH 140; ACCT/FIN/MGMT 208, MGMT 318, MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT360 - Database Management 360-3 Database Management. (Same as ACCT 360) This course provides an introduction to database design and database management in business. It covers analysis, design, and implementation of organizational databases including data modeling, database management systems, data-based information systems design, security, and data quality assurance. Prerequisite: MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT362A - Busi App Pro-Visual Basic.Net 362A-3 to 9 Business Applications Programming-Visual Basic.Net. An introduction to the principles of computer programming and business applications development tools. Includes basic programming constructs, language elements, graphical, user interface design, and database programming in integrated development environments. Prerequisite: MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT362B - Business App Progrm-ERP Langs 362B-3 to 9 Business Applications Programming-ERP Languages. An introduction to the principles of computer programming and business applications development tools. Includes basic programming constructs, language elements, graphical, user interface design, and database programming in integrated development environments. Prerequisite: MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT362C - Business App Programming-Java 362C-3 to 9 Business Applications Programming-Java. An introduction to the principles of computer programming and business applications development tools. Includes basic programming constructs, language elements, graphical, user interface design, and database programming in integrated development environments. Prerequisite: MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT362D - Business App Progrm-Visual C++ 362D-3 to 9 Business Applications Programming-Visual C++. An introduction to the principles of computer programming and business applications development tools. Includes basic programming constructs, language elements, graphical, user interface design, and database programming in integrated development environments. Prerequisite: MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT362E - Business App Program-Other 362E-3 to 9 Business Applications Programming-Other. An introduction to the principles of computer programming and business applications development tools. Includes basic programming constructs, language elements, graphical, user interface design, and database programming in integrated development environments. Prerequisite: MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT380 - Managing Information Systems 380-3 Managing Information Systems. Management issues related to information and information technology that confront today's diverse organizations. Topics include integration and use of information systems within organizations and organizational partners, business planning for information systems, legal and ethical considerations with information systems, social and technological trends. Prerequisite: MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT385 - Personnel Human Resource Mgt 385-3 Personnel and Human Resources Management. (Same as PSYC 322) An introduction to the development, application, and evaluation of policies, procedures, and programs for the recruitment, selection, development and utilization of human resources in an organization. Prerequisites: MATH 139, ACCT/FIN/MGMT 208 and MGMT 304 with a grade of C

or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT411 - Enterprise Networks & Commun 411-3 Enterprise Networks and Communications. (Same as ACCT 411) This course focuses on the application of data communications and network technologies for improving business. Coverage includes, but is not restricted to, an introduction to the principles of data transmission technology, various communication architectures and protocols, basic network design principles, Internet and Intranet technologies, data security issues and elements of network management. Not for graduate credit. Prerequisite: MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT420 - Project Management 420-3 Introduction to Project Management. Application of project management principles for improving business. Coverage includes, but is not limited to: introduction to the principles of project management, Project Management Institute (PMI) guidelines, US and international project management scenarios, and working together as a project management team. Students will work with Project Management Body of Knowledge (PMBOK) guidelines. Students will accrue enough education hours to sit for the PMI CAPM certification. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT421 - Info Systems Analysis & Design 421-3 Information Systems Analysis and Design. Strategies and techniques for structured analysis and design in the development of information systems. System development using structured tools/techniques for describing process flows, data flows, and data structures. Alternative methods of system development are also discussed. Not for graduate credit. Prerequisite: MGMT 360 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT422 - Business Systems Development 422-3 Business Systems Development. An introduction to web-based, e-business development. Hands-on exercises in Java-Script, Active Server Pages.Net and related tools for web design, client scripting, server scripting, and web database transactions. Not for graduate credit. Prerequisite: MGMT 360 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT431 - Organiztn Design & Structures 431-3 Organizational Design and Structures. The study of modern theories of complex organizations. Particular emphasis is placed on open-systems perspectives of administrative theory and the adaptation of the organization to a changing environment. Not for graduate credit. Prerequisite: MGMT 341 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT446 - Leadership & Mgrl Behavior 446-3 Leadership and Managerial Behavior. This course will concentrate on leader and manager behavior at middle and upper organizational levels. Emphasis will be placed on leader and manager effectiveness and the factors that impact effectiveness. Not for graduate credit. Prerequisite: MGMT 341 with a grade of C or better. Restricted to College of Business major or minor, junior standing.

MGMT452 - Supply Chain Transportation 452-3 Supply Chain Transportation and Logistics. This course examines the areas of transportation and logistics as they relate to supply chain management. Not for graduate credit. Prerequisite: MGMT 318 with a grade of C or better. Restricted to College of Business major or minor, junior standing.

MGMT456 - Managing Global E-Bus Syst 456-3 Managing Global E-Business Systems. The organizational and managerial issues affecting global e-business today are addressed. Topics included are corporate strategy and IT architecture in a global marketplace; outsourcing impacts on e-business; legal, social, and ethical issues; information security; and e-business models and IT. Not for graduate credit. Prerequisite: MGMT 345 with a grade of C or better. Restrictions: College of Business majors or minors; or departmental approval required.

MGMT471 - Seminar in Entrepreneurship 471-3 Seminar in Entrepreneurship. Investigation of selected special or advanced topics in seminar format. Topics may include but are not limited to entrepreneurship, small business analysis, or topics related to the ownership and management of a business. Activities will include library and field research, data analysis, report writing, and active participation in seminar presentations and discussions. Designed particularly for the student who has completed FIN 350 and

MGMT 350 and has discussed personal small business or entrepreneurial objectives with the instructor prior to registration. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT474 - Mgmt's Responsibility Society 474-3 Management's Responsibility in Society. Analysis of the cultural, social, political, economic, and immediate environment of the organization. Particular emphasis is given to the manner in which the manager adapts to and is influenced by the environment and its conflicting demands. Not for graduate credit. Restrictions: College of Business majors or minors, senior standing; or departmental approval required.

MGMT481 - Administrative Policy 481-3 Administrative Policy. Development of organizational strategies and policies within environmental and resource limitations. Emphasis upon the application and integration of basic principles from all areas of business by case problem analysis, simulation exercises, and group participation. Not for graduate credit. Prerequisites: MGMT 304, MGMT 318, FIN 330, and MKTG 304. Restrictions: College of Business majors or minors, senior standing.

MGMT483 - Advanced Prod-Operations Mgmt 483-3 Advanced Production-Operations Management. An in-depth study of production and inventory management with a focus on preparation for the American Production and Inventory Control Society (APICS) certification examinations. Topics covered include planning for material and capacity requirements, scheduling, Theory of Constraints, Just-in-Time and Total Quality Management. Not for graduate credit. Prerequisite: MGMT 318 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT485 - Organizatnl Change & Dev 485-3 Organizational Change and Development. Analysis of problems in personnel management with emphasis on current trends and techniques. Case problems, special reports and experiential approaches are used as a basis for examining ways of using an organizations' human resources to best advantage. Not for graduate credit. Prerequisite: MGMT 341 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing; or departmental approval required.

MGMT491 - Independent Study 491-1 to 6 Independent Study. Utilizes special faculty resources to enable individually, the exploration of an advanced area of study through research by means of data analysis and/or literature search. Not for graduate credit. Restrictions: College of Business majors, junior standing, and departmental approval required.

MGMT495 - Internship in Management 495-3 Internship in Management. Supervised work experience that relates to the student's academic program and career objectives. Course may be repeated in a subsequent semester, but only three semester hours may be applied toward the Management major. Additional credit hours may only satisfy the 300-400 level College of Business prefix elective or general elective requirements. Mandatory Pass/Fail only. Not for graduate credit. Restrictions: Management majors, junior standing or higher. Special approval needed from the department.

MGMT497 - Special Topics in Management 497-3 Special Topics in Management. An exploration of selected current topics in management with an emphasis on covering a particular area in depth. Timely topics are announced in advance, and both faculty and students may suggest topics. Students may repeat enrollment in the course as the topic varies. Restriction: College of Business majors or minors, junior standing; special approval needed from the department.

Management Faculty

Bateman, David N., Professor, Emeritus, Ph.D., Southern Illinois University, 1970.

Carter, Min Z., Assistant Professor, Ph.D., Auburn University, 2009.

Dai, Ye, Assistant Professor, Ph.D., University of Texas at Austin, 2012.

DeYong, Gregory D., Assistant Professor, Ph.D., Indiana University 2010.

Goodale, John C., Associate Professor, Ph.D., University of Utah, 1996.

Karau, Steven J., Professor, Ph.D., Purdue University, 1993.

Larson, Lars L., Associate Professor, Emeritus, Ph.D., University of Illinois, 1971.

Litecky, Charles R., Professor, Emeritus, Ph.D., University of Minnesota, 1974.

McKinley, William, Professor, Emeritus, Ph.D., Columbia University, 1983.

Melcher, Arlyn J., Professor, Emeritus, Ph.D., University of Chicago, 1964.
Mykytyn, Jr., Peter P., Professor and Chair, Ph.D., Arizona State University, 1985.
Nelson, H. James, Associate Professor, Ph.D., The University of Colorado, 1999.
Nelson, Kay M., Professor, Ph.D., The University of Texas at Austin, 1995.
Nelson, Reed E., Professor, Emeritus, Ph.D., Cornell University, 1983.
Pearson, John M., Professor, Emeritus, D.B.A., Mississippi State University, 1991.
Sekaran, Uma, Professor, Emerita, Ph.D., University of California at Los Angeles, 1977.
Stubbart, Charles I., Associate Professor, Emeritus, Ph.D., University of Pittsburgh, 1983.
Tadisina, Suresh, Professor, Emeritus, Ph.D., University of Cincinnati, 1987.
Vicars, William M., Associate Professor, Emeritus, Ph.D., Southern Illinois University, 1969.
White, Gregory P., Professor, Emeritus, Ph.D., University of Cincinnati, 1976.

Microbiology

Microbiology is the study of microorganisms, a large and diverse group of organisms that exist as single cells or cell clusters. The science of microbiology includes the study of microbial growth, biochemistry, genetics and ecology and the relationship of microorganisms to other organisms including humans. As a basic biological science, microbiology provides some of the most accessible research tools for probing the nature of life processes. Our sophisticated understanding of the chemical and physical principles governing life has developed from studies of microorganisms. As an applied biological science, microbiology deals with many important practical problems in medicine, agriculture, biodegradation and food industries, and is at the heart of biotechnology industries. Students pursuing a major in microbiology will have an opportunity to take coursework related to these important areas. Chemistry is also an integral part of modern microbiology. Therefore, general and organic chemistry are required for the microbiology major. A minor in chemistry can be achieved by completing both the chemistry requirements and MICR 425 with grade of C or better. All 300- and 400-level courses must be taken at SIU Carbondale. In addition, opportunities for undergraduate research in microbial biochemistry, genetics and diversity, as well as in immunology and molecular biology are available for outstanding undergraduate students. The microbiology major, chemistry minor and undergraduate research options are strong assets for students who seek careers in health care professions or industrial microbiology, or who seek graduate training in microbiology or related disciplines.

The following program of study prepares students for research or teaching positions after the bachelor's degree or for advanced study in graduate programs in microbiology, molecular biology or cell biology. A grade of C or better must be earned in MICR 301 and MICR 302 to fulfill degree requirements. Transfer courses used for MICR 301 and MICR 302 equivalencies must have a C grade or better. An overall grade point average of 2.00 or better for all microbiology courses is required to satisfy degree requirements. A student cannot repeat a course or its equivalent in which a grade of B or better was earned without the consent of the department.

Bachelor of Science Degree in Microbiology, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Science Academic Requirements	6
Biological Sciences - completed with major Mathematics - completed with major Physical Sciences - completed with major Supportive Skills - CS 200B or CS 201 or CS 202; ENGL 290, ENGL 291, ENGL 491; MATH 282 or PLB 360 or ZOOL 360; or any two-semester sequence of one of the	6

Degree Requirements	Credit Hours
following foreign languages: 200-level French, German, Japanese, or Spanish	
Microbiology Major Requirements	63
BIOL 211, BIOL 212,(3 hours included in the UCC Life Science hours)	5
MICR 301, MICR 302, MICR 403, MICR 460, MICR 480, MICR 481 and MICR 495.	22
Microbiology Electives - Senior level work consisting of lecture courses selected from: MICR 421, MICR 423, MICR 425, MICR 441, MICR 453, MICR 454, MICR 470, MICR 477	12
CHEM 200 or CHEM 200H, CHEM 201, CHEM 202 or CHEM 202H, CHEM 210 or CHEM 210H,CHEM 211, CHEM 212 or CHEM 212H, CHEM 340, CHEM 341 and CHEM 442.	15
MATH 141, MATH 150 or MATH 151 (3 hours included in the UCC Mathematic Hours)	1
PHYS 203A, PHYS 253A, PHYS 203B, PHYS 253B	8
Electives	12
Total	120

Minor in Microbiology

A minor in microbiology consists of 16 semester hours, to include MICR 301, MICR 302, and other courses determined by the student in consultation with the microbiology advisor.

Certificate Program in Histotechnology

See Histotechnology.

Microbiology Courses

MICR101 - Microbes and Society 101-3 Microbes and Society. A discussion of the personal and social implications of the interactions between humans and microorganisms. Topics include: microbial structure, genetics and metabolism; the general role of microorganisms in industry, the environment, agriculture, food production, and disease; the use of microorganisms in biotechnology and biodegradation, and in the manufacture of useful products; methods of transmission and control of infectious agents. Three hours lecture.

MICR201 - Elementary Microbiology 201-4 Elementary Microbiology. (Advanced University Core Curriculum course) Basic concepts of microbiology, classification, metabolic activity and the effect of

physical and chemical agents on microbial populations. Host-parasite interactions. Infectious agents, methods of transmission and control. Three hours lecture and three hours laboratory per week. Spring semester. Satisfies the University Core Curriculum Science Group II requirement in lieu of PLB 115 or ZOOL 115. Lab fee: \$30.

MICR301 - Principles of Microbiology 301-4 Principles of Microbiology. Structure, metabolism, growth, genetics, molecular biology, and applied aspects of microorganisms with emphasis on pure culture methods of study of bacteria and viruses. Three hours lecture, three hours laboratory. Fall semester. Prerequisite: CHEM 200, 201, 210 and 211, and BIOL 211 or ZOOL 118. Lab fee: \$30.

MICR302 - Molecular Biology 302-3 Molecular Biology. Molecular structure, dynamics, and genetics of living cells and viruses with particular attention to the transfer of biological information. Spring semester. Prerequisite: CHEM 200, 201, 210 and 211, and BIOL 211.

MICR403 - Medical Microbiology 403-3 Medical Microbiology Lecture. (Same as MBMB 403) A survey of the more common bacterial, mycotic and viral infections of humans with particular emphasis on the distinctive properties, pathogenic mechanisms, epidemiology, immunology, diagnosis and control of disease-causing microorganisms. Three hours lecture. Spring semester. Prerequisite: MICR 301, or consent of instructor.

MICR405 - Clinical Microbiology 405-3 Clinical Microbiology. (Same as MBMB 405) This course will be offered in Springfield only. A comprehensive course for health science professionals covering the biology, virulence mechanisms, and identification of infectious agents important in human disease and host-defense mechanisms. Clinical applications emphasized. Three hours lecture. Prerequisite: MICR 301, or consent of instructor.

MICR421 - Biotechnology 421-3 Biotechnology. (Same as MBMB 421) Topics covered will include the genetic basis of the revolution in biotechnology, medical applications including genetic screening and therapeutic agents, industrial biotechnology and fermentation, and agricultural applications. Three hours lecture. Fall semester. Prerequisite: MICR 302, or consent of instructor.

MICR423 - Geomicrobiology 423-3 Geomicrobiology. (Same as MBMB 423 and GEOL 423) The course will focus on the role that microorganisms play in fundamental geological processes. Topics will include an outline of the present understanding of microbial involvement of weathering of rocks, formation and transformation of soils and sediments, and genesis and degradation of minerals. Elemental cycles will also be covered with emphasis on the interrelationships between the various geochemical cycles and the microbial trophic groups involved. Prerequisite: MICR 301 and CHEM 210 and 211. Recommended: GEOL 220, 221 or 222.

MICR425 - Biochem Phsl Microorgnsms 425-3 Biochemistry and Physiology of Microorganisms Lecture. (Same as MBMB 425) Chemical composition, cellular structure, and metabolism of microorganisms. Fall semester. Prerequisite: CHEM 340 or CHEM 339.

MICR441 - Viruses and Disease 441-3 Viruses and Disease. (Same as MBMB 441) An intensive, lecture-based course in virology which will emphasize principles of molecular virology, the ubiquity of viruses in nature, evolutionary relationships between viruses, co-evolution between virus and host, and the pathogenic consequences of some viral infections (e.g., AIDS, hepatitis, cancer, etc.). Prerequisites: MICR 460 or MBMB 460 or consent of instructor.

MICR453 - Immunology Lecture 453-3 Immunology Lecture. (Same as MBMB 453) Principles of molecular and cellular immunology. Particular emphasis is given to molecular mechanisms involved in activation and maintenance of the immune response at the basic science level. The role of the immune system in medical diagnostic procedures and in human health is also discussed. Spring semester. Prerequisite: MICR 403, or consent of instructor.

MICR454 - Soil Microbiology 454-4 Soil Microbiology. (Same as CSEM 454, PSAS 454) A study of microbial numbers, characteristics, and biochemical activities of soil microorganisms with emphasis on transformation of organic matter, minerals, and nitrogen in soil. Prerequisite: MICR 301 or CSEM 240. Lab fee: \$15.

MICR455 - Medical Immunology 455-2 Medical Immunology. (Same as MBMB 455) This course will be offered in Springfield only. A survey of the components of the immune system and how they interact with each other to produce responses that are important in the control or mediation of human disease. Two hours lecture. Prerequisite: MICR 301 or consent of instructor.

MICR460 - Bacterial & Viral Genetics 460-3 Bacterial and Viral Genetics. (Same as MBMB 460) The genetic mechanisms and regulatory events that control gene transfer, lambda phage infection, recombination, and metabolic pathways including a brief introduction to bioinformatics, genome analysis and global regulatory functions. Three hours lecture. Fall semester. Prerequisite: MICR 301 and 302, or consent of instructor.

MICR470 - Prokaryotic Diversity 470-3 Prokaryotic Diversity Lecture. (Same as MBMB 470) A consideration of the major groups of prokaryotes with special emphasis on their comparative physiology and ecology. Three hours lecture. Spring semester. Prerequisite: MICR 301 or consent of instructor.

MICR477 - Microbial Ecology 477-3 Microbial Ecology. (Same as MBMB 477) Concepts of ecology applied to microorganisms; methods in microbial ecology; interactions of microbes with their living and non-living environment; microbial habitats and functions. Roles and regulation of microbes in natural and man-made environments, from cellular to community level. Prerequisite: MICR 301 or instructor's consent (based on proven background in both microbiology and ecology).

MICR480 - Molecular Biology of Micro Lab 480-4 Molecular Biology of Microorganisms Laboratory. (Same as MBMB 480) Genetic and biochemical analyses of microorganisms using a variety of techniques in molecular biology, molecular genetics and biotechnology. Six hours laboratory per week plus two hours of supervised unstructured laboratory work in most weeks. Fall semester. Prerequisite: MICR 301 and 302 with a C grade or better and two (or concurrent enrollment in two) of the following: MICR 421, 423, 425 or 460. Lab fee: \$60.

MICR481 - Diagnostic & Applied Micr Lab 481-4 Diagnostic and Applied Microbiology Laboratory. (Same as MBMB 481) Enrichment and isolation of prokaryotes from natural samples, diagnostic methods for the identification of pathogenic bacteria, and the nature of the immune response. Six hours laboratory per week plus two hours supervised unstructured laboratory work in most weeks. Spring semester. Prerequisite: MICR 301 and 302 with a C grade or better and two (or concurrent enrollment in two) of the following: MICR 403, 453 or 470. Lab fee: \$60.

MICR490 - Undergrad Research Participatn 490-1 to 3 Undergraduate Research Participation. Investigation of a problem either individually or as part of a research group under the direction of a member of the faculty. Not for graduate credit. Prerequisite: MICR 301 or equivalent and a 3.0 or better grade point average in Microbiology. Special approval needed from the instructor.

MICR495 - Senior Seminar 495-1 Senior Seminar. Readings, discussions, and presentations of current research topics on microbiology. Restricted to senior standing in Microbiology or Biological Sciences. Graded P/F only.

Microbiology Faculty

Achenbach, Laurie A., Professor, Emerita, Ph.D., University of Illinois, 1988.

Bender, Kelly S., Associate Professor and Chair, Ph.D., Southern Illinois University Carbondale, 2003.

Clark, David P., Professor, Emeritus, Ph.D., University of Bristol England, 1976.

Fisher, Derek J., Assistant Professor, Ph.D., University of Pittsburgh, 2006.

Fix, Douglas F., Associate Professor, Emeritus, Ph.D., Indiana University, 1983.

Haddock, John D., Associate Professor, Emeritus, Ph.D., Virginia Polytechnic Institute and State University, 1990.

Hamilton-Brehm, Scott D., Assistant Professor, Ph.D., University of Georgia, 2008.

Konjufca, Vjollca, Associate Professor, Ph.D., University of Arkansas Fayetteville, 2002.

Madigan, Michael T., Professor and Distinguished Scholar, Emeritus, Ph.D., University of Wisconsin, 1976.

Martinko, John M., Associate Professor and Distinguished Teacher, Emeritus, Ph.D., State University of New York at Buffalo, 1978.

Marketing

Marketing involves a system of interrelated activities used to develop, price, promote and distribute goods and services to customers, creating exchanges that satisfy individual and organizational goals. It is the marketing function that links the production of goods and services with their use. Effective marketing is essential to organizations in their efforts to achieve a competitive advantage that can be sustained. Without this, growth and survival of the organization are threatened.

The bachelor's degree program in marketing encompasses the entire key marketing functions, including those in e-commerce. Graduates may take advantage of challenging and dynamic career opportunities in large and small businesses, in government, and in non-profit organizations. Careers in the field of marketing cut across many industries and involve a variety of organizations. Some of the career options open to the marketing major include industrial selling and sales management, retailing, advertising, marketing research, distribution, international marketing and marketing management.

A major in Marketing requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for the Marketing major* (as described below), and students must earn a minimum 2.0 grade point average for those major courses.

The Capstone Option for Transfer Students

The Capstone Option is available to students who have earned an Associate in Applied Science (AAS) degree or have the equivalent and who have a cumulative 2.0/4.0 GPA on all accredited coursework prior to the completion of the AAS, as calculated by SIU. The Capstone Option reduces the University Core Curriculum requirements from 39 to 30 hours, therefore reducing the time to degree completion. See the Capstone Option section for more information on this option. Students who apply for the Capstone Option will work with the College of Business Advisement Office for approval of the Capstone Option and will complete a personal contract for a degree completion plan.

Differential Tuition

The College of Business assesses College of Business majors a differential tuition surcharge of 15% of applicable tuition for declared College of Business majors. The College of Business has a "minor program fee" for other than College of Business majors that is equal to 15% of 15 credit hours of applicable tuition for declared College of Business minors.

Bachelor of Science Degree in Marketing, College of Business

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Professional Business Core	47
Requirements for Major in Marketing*	24
*Minimum grade of C required for all classes in major area. Marketing Core MKTG 305, MKTG 329, MKTG 363, MKTG 390, MKTG 493	15

Degree Requirements	Credit Hours
Marketing Electives	9
Electives ¹	10
Total	120

¹ 120 semester hours are required for graduation. Any additional hours of college level credit can be used to equal minimum 120 semester hours required for degree.

Marketing Minor

A minor in Marketing consists of a minimum of 15 semester hours, including MKTG 304, MKTG 305 and nine credit hours in Marketing at the 300-level or above. All prerequisites for these classes must also be satisfied. MKTG 390, MKTG 493, MKTG 495 and MKTG 499A-D may not be taken as part of the minor in Marketing. An advisor within the College of Business must be consulted before selecting this field as a minor. At least nine of the 15 semester hours must be taken at Southern Illinois University Carbondale.

A minor from the College of Business requires students to earn a minimum grade of C (a grade of C- is not sufficient) in each of the courses taken to satisfy the requirements for their minor, and students must earn a minimum 2.0 grade point average for those minor courses.

Marketing Courses

MKTG304 - Marketing Management 304-3 Marketing Management. An introduction to issues involved in managing the firm's marketing activities in a dynamic environment. Introduces and discusses how concepts such as branding, pricing, promotion, and distribution enhance customer value and satisfaction. Examines how firms leverage technology to improve the efficacy of both traditional and e-commerce marketing activities. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG305 - Consumer Behavior 305-3 Consumer Behavior. Examines the psychological and sociological factors that influence consumption and decision-making. Studies the practical implications of consumer attitudes and behavior for such marketing activities as merchandising, market research, distribution, product development, pricing, branding, and e-commerce. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG329 - Marketing Channels 329-3 Marketing Channels. The methods and processes used in the distribution of consumer and industrial products and services. Emphasis is upon the ways in which certain basic distribution functions are carried out in the traditional channel system as well as e-commerce. The roles of a variety of sellers and buyers in for-profit and not-for-profit manufacturers, wholesalers, retailers and e-businesses as parts of this system are analyzed. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG336 - International Business 336-3 International Business. Business activities of firms and social organizations are examined in an international/global environment. The course examines the fundamental concepts and principles of international/global business. It analyzes the marketing, finance, accounting, managerial, logistics, and production functions of international/global operations. It examines the changing technological environment as it impacts international/global business, including the realm of e-commerce. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG350 - Small Business Marketing 350-3 Small Business Marketing. Small business owners face many challenges in today's dynamic and competitive market place. This course is designed to equip the

small business owner/manager with the expertise needed to effectively and efficiently implement the marketing strategies that lead to desired goals. The course will focus on marketing issues like: starting a small business, locating market opportunities, developing growth plans for brick-and-mortar as well as online business, and developing marketing plans specifically for small businesses. Course is taught from the point of view of the small business manager. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG363 - Promotion Management 363-3 Strategic Promotion Management. The planning and management of marketing communication activities including advertising, personal selling, sales promotion, public relations, packaging and branding. The emphasis in the course is on strategic issues rather than tactical details. A consulting project involving a real client is usually required. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG364 - Internet Marketing 364-3 Internet Marketing and Social Media. Introduction to digital marketing and marketing on the internet, including email marketing, social networks, search engine advertising and optimization, blogging, virtual communities, viral and affiliate marketing, mobile marketing, and online B2B communications. Focus is on how firms can use these new mediums to communicate with target audiences, deepen their relationships with online customers, and promote their products/services. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG380 - Professional Sales 380-3 Professional Sales. Analysis of professional selling activities and how they fit into the firms promotional efforts. The course examines the dynamics of selling in traditional and e-commerce settings. The course emphasizes preparing the student via video taping to make sales presentations in business settings. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG390 - Marketing Research & Analysis 390-3 Marketing Research and Analysis. The application of traditional and electronic media procedures and theories appropriate to solving marketing problems related to customer and competitive intelligence and marketing information systems. Prerequisites: MATH 139; ACCT/FIN/MGMT 208 and MKTG 304 with a grade of C or higher. Restrictions: College of Business majors, junior standing; departmental approval required.

MKTG401 - Retail Management 401-3 Retail Management. Designed to present and integrate basic principles in decision areas such as location, layout, organization, personnel, merchandise control, pricing, sales promotion, traditional and e-commerce marketing strategies, and channel development considerations. A strategic managerial perspective of retail merchandising. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG405 - Brand Management 405-3 Brand Management. This course is about branding, and the ways brands acquire and maintain economic and non-economic value. During our time together, we will explore the origins, power, theory, meaning, relevance and practice of brands, brand development, brand metrics and brand management. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG435 - International Marketing 435-3 International Marketing. Analysis of international operations and markets. Emphasis on the factors influencing marketing to and within foreign countries and the alternative methods of operations open to international firms including e-commerce. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG438 - Sales Management 438-3 Sales Management. Analysis of the sales effort within the marketing system. Philosophies, concepts and judgment criteria of the sales function in relation to the total marketing program. Emphasis on the integration of computer- and Internet-based technologies in the strategic development and operations of the sales force. Prerequisite: MKTG 304, MKTG 380, and MGMT 304 with grades of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG463 - Advertising Management 463-3 Advertising Management. Deals with advertising from the viewpoint of business management. Discussion of integrated marketing communication and problems of integrating advertising strategy into the firm's total marketing program. Course discusses the role of advertising in different business environments such as technology driven markets and electronic commerce. Prerequisite: MKTG 304 and MKTG 363 with grades of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG489 - Services Marketing 489-3 Services Marketing. An exploration of the special challenges of services marketing, including analyzing and developing solutions for new service design and innovation; branding and selling services; service quality and customer satisfaction; infusion of services into manufacturing industries; service delivery and distribution including through intermediaries and electronic channels; self-service technology and smart services; pricing and ROI of services; and service failure and recovery. Prerequisite: MKTG 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG493 - Marketing Strategy 493-3 Marketing Strategy. Integrates all marketing concepts discussed in core required marketing courses. The course is aimed at developing the student's ability to think comprehensively, and to apply marketing concepts in traditional and e-marketing problems. Prerequisite: MKTG 305, 329, 363 and 390 with grades of C or better. Restrictions: Marketing major or departmental approval required.

MKTG495 - Internship in Marketing 495-3 Internship in Marketing. Provides the student an opportunity to participate in an internship program coinciding with areas of interest. Course may be repeated in a subsequent semester, but only three semester hours may be applied toward the Marketing major. Additional credit hours may only satisfy the 300-400 level College of Business prefix elective or general elective requirements. Mandatory Pass/Fail only. Not for graduate credit. Restrictions: Marketing majors, junior standing or higher. Special approval needed from the department.

MKTG496 - Field Seminar Intl Business 496-3 Field Seminar in International Business. Coursework and field study related to international business issues. Students will complete coursework on campus and then travel to international locations (e.g., Europe, Asia, or South America) for scheduled business visits with companies operating in those locations (both international and domestic businesses). Students will also complete additional report writing upon return from their international trip. Fees: package cost for air transportation, land travel in and between countries, lodging, and some meals, in addition to tuition and on-campus costs. Prerequisite: MKTG 304. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

MKTG499A - Marketing Insights 499A-1 to 3 per section Marketing Insights. Provides the student an opportunity to participate in an independent study, or seminar coinciding with areas of interest. May be repeated for credit only when topics vary. Not for graduate credit. Prerequisites: MKTG 304, 305, 363, plus two Marketing electives, a 3.4 SIUC GPA or better in all Marketing courses and a 3.0 SIUC GPA or better in upper division College of Business courses. Restrictions: Marketing major, junior standing or higher, special approval needed from the instructor and departmental chair in the semester prior to enrollment; or departmental approval required.

Marketing Faculty

Adjei, Mavis, Associate Professor, Ph.D., University of Mississippi, 2006.

Anaza, Nwamaka, Assistant Professor, Ph.D., Purdue University, 2010.

Bruner, Gordon C., II, Professor, Emeritus, Ph.D., University of North Texas, 1983.

Clark, Terry, Professor and Dean, Ph.D., Texas A&M University, 1987.

Fraedrich, John P., Professor, Ph.D., Texas A & M University, 1988.

King, Maryon F., Associate Professor, Emeritus, Ph.D., Indiana University, 1989.

Knowles, Lynette L., Associate Professor, Emeritus, Ph.D., Ohio State University, 1990.

Lee, Jaehoon, Assistant Professor, Ph.D., University of Texas at San Antonio, 2011.

Novar, Ellen, Lecturer, M.B.A., Southern Illinois University Carbondale, 1996.

Summey, John H., Associate Professor, Emeritus, Ph.D., Arizona State University, 1974.

Mining and Mineral Resources Engineering

Mining engineers engage in planning, design, development and management of surface and underground mining operations for extraction of the earth's mineral deposits. The Mining Engineering Program prepares graduates to meet the challenges of the mining industry with emphasis on the coal and aggregate industries.

The missions of the Department are: to provide quality engineers to meet current trained manpower needs for exploration and extraction of regional minerals resources in an environmentally acceptable manner; advance the mining engineering discipline by engaging in basic and applied research, with emphasis on solving regional problems; and to transfer and apply new technical knowledge to enhance the competitive position of the state and national minerals industry.

Program Educational Objectives

Our undergraduate degree in mining engineering prepares our students for careers in or related to the mining industry. Within three to five years of graduation, our students will:

1. Have the ability to practice mining engineering in global, sustainable and societal contexts.
2. Have skills needed for effective communication, teamwork and creative thinking.
3. Have the ability to pursue advanced education and/or lifelong learning to support career development in a broad range of mining related fields.
4. Have the education and background to always act in a safe, professional and ethical manner.

Student Outcomes

Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire as they progress through the program. In order to meet our program educational objectives, we will prepare our students to know the following:

1. The ability to apply knowledge of mathematics, science, and engineering.
2. The ability to design and conduct experiments, as well as to analyze and interpret data.
3. The ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. The ability to function on multi-disciplinary teams.
5. The ability to identify, formulate and solve engineering problems.
6. An understanding of professional and ethical responsibility.
7. The ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. A recognition of the need for and an ability to engage in life-long learning.
10. Knowledge of contemporary issues.
11. The ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

Coursework in the program includes such areas as surface and underground mining systems, mine ventilation, ground control and rock mechanics, mineral and coal processing, material handling systems, engineering economics, mine environment, health and safety engineering, probability and statistics applications, and computer-aided mine design. Facilities include modern, well-equipped rock mechanics, mine ventilation, mineral processing, material handling, mine environment, and computer laboratories.

After completing the program, the graduate may work in an engineering or management position for mining industries, environmental companies, construction industries, oil companies, equipment manufacturers, research organizations, or government agencies. The coursework also provides strong preparation for further study at the graduate level. The undergraduate program in mining engineering is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Bachelor of Science Degree in Mining Engineering, College of Engineering

Mining Engineering Major

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
Requirements for Major in Mining Engineering	(9)+87
Basic Science	(6)+9
PHYS 205A, PHYS 255A ²	(3)+1
CHEM 200, CHEM 201 ³	(3)+1
GEOL 220 or GEOL 222, GEOL 302	7
Mathematics	(3)+14
MATH 150, MATH 250, MATH 251, MATH 305	(3)+11
MNGE 417	3
Science/Math Elective ⁴	3
Required Engineering Courses	17
ENGR 250, ENGR 261, ENGR 335, ENGR 350A, ENGR 370A	15
ME 102	2
Required MNGE Courses - MNGE 270, MNGE 310, MNGE 315, MNGE 317, MNGE 320, MNGE 420, MNGE 425, MNGE 430, MNGE 431, MNGE 440, MNGE 455, MNGE 460, MNGE 475	38
Approved Electives	6
Total	126

1 Students transferring are required to: (a) have an associate degree in a baccalaureate-oriented program or (b) meet the Core Curriculum requirements for engineering students. See departmental advisor for an approved course.

2 Courses required for the major will apply towards University Core Curriculum.

3 Courses required for the major will apply towards University Core Curriculum.

4 Three hours of a science/math elective and six hours of major electives are required. See departmental advisor for approved courses.

Mining and Mineral Resources Engineering Courses

MNGE270 - Intro to Mining Engineering 270-3 Introduction to Mining Engineering. Importance of mining to a country's economy; stages of mining; prospecting and exploration, development and extraction; unit operations of mining; surface mining systems; underground mining methods; novel mining methods; mineral processing; marketing of minerals. Restricted to Engineering students or permission of instructor.

MNGE292 - Special Topics 292-1 to 3 Special Topics in Mining Engineering. Course topics will be identified by instructor. Restricted to mining engineering transfer students.

MNGE310 - Underground Mining 310-3 Underground Mining. Underground mining access openings; underground mining equipment types and functions; advancing, sinking, and production blast rounds, underground mining methods, planning, and layout considerations. Prerequisite: MNGE 270 or consent of instructor. Pre or Co-requisite: MATH 150 or consent of instructor.

MNGE315 - Surface Mining 315-3 Surface Mining. Surface mining methods, equipment, and sequences; surface mining tools; surface mine blast design basics; truck-shovel fleet design, sizing and selection. Prerequisite: MNGE 270 or consent of instructor. Pre or Co-requisite: MATH 150 or consent of instructor.

MNGE317 - Ore Minerals 317-1 Ore Minerals. Introduction to the rocks and minerals that are commonly mined including such considerations as typical grade and tonnage relations, an overview of how the minerals and rocks are made into economic products, and the value and use of those products. Class includes basic mineral identification. Prerequisites: MNGE 270, GEOL 220 or GEOL 222 and knowledge of element symbols and formulas from chemistry or similar background with consent of instructor.

MNGE320 - Mine Surveying Lab 320-1 Mine Surveying Laboratory. Introduction to surveying; horizontal and vertical angles; using a level; land surveying; analysis of survey data for engineering design. Laboratory. Prerequisite: MATH 109 or MATH 111, or consent of instructor.

MNGE392 - MNGE Co-op Education 392-1 to 6 Mining Engineering Cooperative Education. Supervised work experience in industry, government or professional organizations. Students work with on-site supervisor and faculty adviser. Reports are required from the student and the employer. Hours do not count toward degree requirements. Mandatory Pass/Fail. Restricted to sophomore standing.

MNGE401 - Mining Env Impacts & Permits 401-1 Mining Environmental Impacts and Permits. Socio-economic impacts of mining industry. Analyzing the markets for coal and its products. Mining operations and related environmental impacts. Mining permits. Prerequisite: MNGE 270 or consent of instructor.

MNGE405 - Field Trip 405-1 Field Trip. Visit several mining operations and prepare a report. Not for graduate credit. Prerequisite: MNGE 270.

MNGE417 - Stats, Prob and Modeling 417-3 Statistics, Probability, and Modeling. Basic concepts of probability and statistics, analysis of engineering data, fitting data to distribution functions. Modeling of engineering systems and optimization. Project management techniques and system simulation. Prerequisite: MATH 150.

MNGE420 - Mineral Processing 420-4 Mineral and Coal Processing. Principles of processing minerals, aggregates and coal, including unit operations of comminution, classification, solid-solid separation, dewatering and tailings disposal. Laboratory investigations of the fundamental principles governing unit operations including size reduction, mineral liberation, classification, mineral recovery, and dewatering. Laboratory. Prerequisite: MNGE 270, CHEM 200, PHYS 205A, MATH 250; Concurrent enrollment in or completion of ENGR 370A or 370B, or consent of instructor.

MNGE421 - Processing Plant Design 421-3 Mineral Processing Plant Design. Engineering design of unit operations used for minerals, aggregates and coal processing including crushing, grinding, industrial screening, classification, gravity separation, flotation and dewatering. Overall plant performance optimization and flow sheet design. Prerequisite: MNGE 417 or concurrent enrollment and MNGE 420. Special approval needed from the instructor.

MNGE425 - Mine Ventilation 425-4 Mine Ventilation Systems Analysis and Design. Thermodynamic principles in mine ventilation. Study of the theories and practice of natural and forced mine ventilation.

Fan and mine characteristics. Ventilation network analysis. Mine ventilation design and problem analysis. Laboratory. Prerequisites: MNGE 310, ENGR 370A or 370B, or consent of instructor.

MNGE430 - Econ of Mineral Resources 430-3 Economics of Mineral Resources. Investment decision making criteria; economic viability of mining projects, financing mining projects; sensitivity and risk analyses. Prerequisite: MNGE 270, or consent of instructor.

MNGE431 - Rock Mechanics 431-4 Rock Mechanics: Principles and Design. Analysis of stress and strain, elementary elasticity, stress distribution around openings, engineering properties of rocks, artificial support and reinforcement, slope stability. Laboratory. Prerequisite: ENGR 350A or 350B. Special approval needed from the instructor for graduate students and non-majors.

MNGE435 - Operations Research 435-3 Application of Operations Research to Mining. Mine systems analysis, operations research and statistics in decision making, production engineering, optimization, linear programming, simulation. Prerequisite: MNGE 270, knowledge of linear algebra, or consent of instructor.

MNGE440 - Material Handling Systems 440-3 Material Handling Systems. Analysis and design of material handling systems such as belt conveying, hoisting and pumping. Mine power systems design. AC and DC motor applications. Material handling systems economics. Prerequisite: MNGE 310 and MNGE 315 with minimum grades of C, or consent of instructor.

MNGE450 - Industrial Minerals 450-3 Industrial Minerals. Mining, Processing and Utilization aspects of key industrial minerals with special emphasis on the aggregates industry. Prerequisite: MNGE 270, 420 or consent of instructor.

MNGE455 - Mine Environment, Safety 455-3 Mine Environment, Health and Safety Engineering. Analysis of mine environmental impacts and their mitigation, safety problems and rules and regulations, hazards and accidents. Sealing and recovery of mines. Design of mine emergency plans, safety methods, and health hazard control plans. Acid mine drainage, minerals waste disposal environmental remediation. Prerequisite: MNGE 310, 315, consent of instructor. Mining industrial experience will be accepted in lieu of prerequisites.

MNGE460 - Senior Design 460-3 Senior Design. Projects in planning and design of surface and underground mining systems. Evaluate and design mining subsystems; integrate subsystems and procedures into a preliminary mine design; and optimize operations from exploration to closure. Two lectures and two two-hour laboratories per week. Prerequisite: MNGE 420, 425, 431, 440, or consent of instructor.

MNGE475 - Excavation Design 475-3 Analysis and Design of Mine Excavations. Rock classification; design of shafts, slopes, tunnels, and underground chambers; support requirements; design of slopes; design of mining systems from ground control point of view; design of impoundments. Prerequisite: MNGE 310, 315, and 431. Special approval needed from the instructor for graduate students and non-majors.

MNGE492 - Special Probs in Mng 492-1 to 5 Special Problems in Mining Engineering. Topics and problems selected either by the instructor or the student with the approval of the instructor. Five hours maximum course credit. Not for graduate credit. Restricted to senior standing. Special approval needed from the instructor.

MNGE511 - Advanced Ground Control 511-3 Advanced Ground Control. Ground control in viscoelastic, plastic, and jointed rocks, artificial rock stabilization, in-situ stresses, minimizing structural damage due to subsidence, bumps and rock bursts. Prerequisite: MNGE 431 or consent of instructor.

MNGE519 - Adv Mine Envirn/Pollutn Contrl 519-2 Advanced Mine Environment and Pollution Control. Study of the design of coal dust control plan; methane control. Design of mine illumination system, noise control and water pollution control. Prerequisite: MNGE 310 and MNGE 315.

MNGE521 - Mineral Proc Desn Simulation 521-3 Mineral Processing Design and Simulation. Mineral processing related unit process design, modeling and simulation of selected processes, complete plant flowsheet development and optimization of plant performance; modeling and simulation experience

through multiple class projects. Prerequisite: MNGE 420, MNGE 421 or concurrent enrollment or consent of instructor.

MNGE530 - Mine Management 530-3 Mine Management. Concepts of probability and statistics, analysis of engineering data, fitting data to distribution function. Modeling of engineering systems and optimization using linear programming, project management principles and system simulation.

MNGE535 - Rock Fragmentation 535-3 Rock Fragmentation. Principles of rock fragmentation, cutting and drilling, mechanics of rock penetration, drillability indices, use of explosives in rock fragmentation, design of blasting patterns in surface and underground mines, prevention of airblast and noise due to blasting, chemical fragmentation. Prerequisite: MNGE 431 or consent of instructor.

MNGE540 - Productn Engr Coal Mines 540-3 Production Engineering in Coal Mines. Operations analyses of production cycles in surface and underground coal mining systems, mine planning and design using computer models, computer simulation, economic analysis of mining systems. Prerequisite: MNGE 435 or consent of instructor.

MNGE545 - Excavation Design 545-3 The Design, Analysis, Monitoring and Support of Underground Excavations. Tunneling thru consolidated and unconsolidated material including cut and cover, drilling and blasting and rapid excavation techniques. Classification and hydrogeologic systems. The design of tunnel liners and support and instrumentation and modeling. Mining majors need MNGE 431 or equivalent or consent of instructor. Some knowledge of rock mechanics, strength of materials and analysis is needed for non-majors. Student cannot get credit for MNGE 475 and MNGE 545, graduate students only.

MNGE550 - Industrial Minerals 550-3 Industrial Minerals. (Same as MNGE 450) Processing of key industrial minerals including Kaolin Clay, Talc, Mica, Carbonates and Aggregates. Ultra fine grinding and surface property based separation processes. Mining and Utilization aspects. Prerequisite: MNGE 270, MNGE 420, MNGE 421 or consent of instructor.

MNGE580 - Seminar 580-1 Seminar. Research presentations and discussion with peer audience.

MNGE592 - Special Investigations 592-1 to 5 Special Investigations. Self based study under the supervision of a Mining Engineering Department Faculty.

MNGE599 - Thesis 599-1 to 6 Thesis.

MNGE601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Mining and Mineral Resources Engineering Faculty

Chugh, Yoginder P., Professor, Emeritus, Ph.D., Pennsylvania State University, 1971.

Harpalani, Satya, Professor, Ph.D., University of California, Berkeley, 1985.

Mohanty, Manoj, Professor, Ph.D., Southern Illinois University, 1997.

Paul, Bradley C., Associate Professor, Emeritus, Ph.D., University of Utah-Salt Lake, 1989.

Sinha, Atmesh K., Professor, Emeritus, Emeritus, Ph.D., University of Sheffield, 1963.

Spearing, Anthony, Associate Professor, Emeritus, Ph.D., University of Silesia, Poland, 1993.

Museum Studies

Museum studies is available as an undergraduate interdisciplinary minor. The purpose of the minor is to introduce students to various aspects of museum work, to acquaint them with the opportunities and

problems faced by museums and museum personnel, and to create career opportunities for students who might seek employment in a museum. Emphasis will be placed on actual work situations in such diverse museum functions as exhibition, curation, cataloging, acquisition, education and administration.

Minor

The museum studies minor consists of 18 hours, with 12 hours of required core courses and 6 hours of electives.

Core Courses: 12 hours selected from Anthropology 450A,B; Art and Design 207 and 447; History 497; Political Science 446. *Electives:* 6 hours selected from Anthropology 304, 442 or 460; Art and Design 499; Political Science 441; Geology 440; History 490, or 493; or courses listed above which are not used for the core.

Museum Studies Requirements

Degree Requirements	Credit Hours
Core Courses: Selected from ANTH 450A, ANTH 450B; AD 207 and AD 447; HIST 497; POLS 446	12
Electives: ANTH 304, ANTH 442 or ANTH 460; AD 499; POLS 441; GEOL 440; HIST 490, or HIST 493; or courses listed above which are not used for the core.	6

Mortuary Science and Funeral Service

The mission of the Mortuary Science and Funeral Service program is to challenge students to achieve academic and professional excellence; prepare students to acquire entry level positions in the funeral service profession; provide quality instruction and stay current with trends of the profession; cultivate and maintain excellent relations with local, state, and national organizations; enhance University and community relations; and work toward the continued improvement of the Mortuary Science and Funeral Service program as an ongoing process.

The Mortuary Science program has, as its central aim, recognized the importance of funeral service personnel as:

- members of a human services profession;
- members of the community in which they serve;
- participants in the relationship between bereaved families and those engaged in the funeral service profession;
- professionals knowledgeable of, and compliant with, federal, state, provincial/territorial, and local regulatory guidelines in the geographic area where they practice; as well as
- professionals sensitive to the responsibility for public health, safety, and welfare in caring for human remains.

In addition, the Mortuary Science program is devoted to:

- Providing a quality learning environment by maintaining high program standards and offer opportunities to network with individuals and entities within the profession.
- Offering students a challenging and rewarding academic curriculum to enable them to fulfill their potential in theory, practice, and management of funeral service.
- Securing and retaining faculty with experience in education and the funeral service field and providing them with opportunities to attend local, state, and national meetings; encouraging their

membership and participation in funeral service organizations; and assuring they add to the body of knowledge of funeral service literature.

- Contributing to the University's growth by developing, maintaining and participating in community activities.
- Assessing its degree requirements and the allocation of credit hours to ensure they are consistent and conform with the accreditation requirements of the American Board of Funeral Service Education.

Mortuary Science Program Objectives:

- To enlarge the background and knowledge of students about the funeral service profession;
- To educate students in every phase of funeral service and to help enable them to develop proficiency and skills necessary for the profession;
- To educate students concerning the responsibilities of the funeral service profession to the community at large;
- To emphasize high standards of ethical conduct;
- To provide a curriculum at the post-secondary level of instruction;
- To encourage student and faculty research in the field of funeral service;
- To provide a quality baccalaureate level mortuary science and funeral service education for its students.
- To be an advanced educational pathway for associate degree or certificate graduates of mortuary science and funeral service programs.
- To promote advanced techniques, skills and knowledge for our students in areas benefitting the funeral service profession.
- To provide the necessary skills that enable our graduates to plan, implement, and manage/own a funeral establishment.
- To emphasize professional services skills required by the state licensing board.
- To provide beneficial preparation so that upon graduation our students may participate in the development and implementation of solutions in the health care area.
- To educate students on the basic knowledge regarding compliance of laws at the state and federal levels, as well as with those of other regulatory agencies pertaining to funeral service practices, public health, and the profession.
- To deliver solid preparation so our future funeral directors/embalmers have a strong background in social sciences, humanities, natural sciences, communication and mortuary sciences and can ethically apply this knowledge in all situations.
- To graduate sought-after funeral directors/embalmers to meet the employment needs of Southern Illinois, the state of Illinois, and the country.
- To provide encouragement for our students to continue their professional growth through continuing education and research following graduation.

This program is the only mortuary science and funeral service program offered in a public university in the state of Illinois. The initial program was developed in response to a request from the Illinois Funeral Directors Association. The Mortuary Science and Funeral Service program at SIU Carbondale is accredited by the American Board of Funeral Service Education (ABFSE), 992 Mantua Pike, Suite 108, Woodbury Heights, NJ 08097, (816) 233-3747. Website: www.abfse.org. Graduates meet licensing requirements established by the Illinois Department of Financial and Professional Regulation. This program in mortuary science and funeral service is recognized by other state licensing boards.

The program is designed to accept students directly from high school or to accommodate students transferring from other accredited post-secondary institutions. Transfer students are admitted with 26 or more transfer hours with a GPA of at least 2.3 (on a 4.0 scale). Enrollment in the program is limited due to variety of circumstances, including rules of accreditation, limitations of facilities/internship sites, and faculty-student ratio.

Prospective students attending another college or university prior to transferring to SIU should concentrate on completing courses articulated or approved as substitutes for SIU's University Core Curriculum requirements. Prior to taking courses that appear to equate to the professional sequence, the applicant should consult with an advisor within the Mortuary Science and Funeral Service program.

The Mortuary Science and Funeral Service program has a Linkage Agreement with Southeastern Illinois College, Rend Lake College and Shawnee College. If you have questions about this agreement, contact the community college advisor or SIU School of Allied Health at (618) 453-7287.

In addition to the professional course work, the student will be responsible for the University Core Curriculum as well as a number of courses, which will lead to an understanding of the psychological, sociological and theological implications of life and death. Each student will serve a semester-long internship at an approved off-campus facility. The expenses related to the internship courses are the responsibility of the student. The Internship Coordinator and/or Program Director will assign the internship location. Prior to participation in the internship, students may be required to undergo an "Internship Site Required" criminal background check and drug screening. Faculty members in the professional courses are licensed funeral directors and embalmers with experience in the profession. The program's Advisory Committee is composed of mortuary science and funeral service professionals.

The student is required to complete the Hepatitis B vaccine series before participating in the laboratory classes. The vaccine may be acquired at the SIU Student Health Center, a local health department, or through a private physician. The cost of this vaccine is the responsibility of the student and documentation showing completion of the vaccine series must be presented to the advisor prior to registration. In addition to the Hepatitis B vaccine requirement, a laboratory uniform, personal protective equipment and instruments must be purchased.

National Board Examination pass rates, graduation rates, and employment rates for this and other ABFSE-accredited program are available at www.abfse.org. To request a printed copy of this program's rates, go to ASA 116, 1365 Douglas Drive, Carbondale, IL 62901 or by e-mail at splash@siu.edu, or by telephone (618) 453-5698. Since laws governing the profession are enacted at the state level, licensing and qualification requirements vary among states. Prospective students should contact the licensing body of the state in which they wish to attempt licensure.

The Mortuary Science and Funeral Service program can be completed at Southern Illinois University Carbondale or in combination with other institutions of higher education.

All MSFS courses that are Requirements for the Major must be passed with a grade of "C" or better. These courses can be retaken once if not passed with a "C". If a student does not pass the course with a grade of "C" or better the second time, they are released from the Mortuary Science and Funeral Service Program and required to submit a change of major form.

Bachelor of Science Degree in Mortuary Science, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
ENGL 101 and 102, MATH 101 or 108, CMST 101, ZOOL 115/ZOOL 118, CHEM 106, PSYC 102, SOC 108, Fine Art Elective, Humanities Elective PHIL 104, Human Health and Multicultural Elective.	
Requirements for Major	76
MSFS 101, MSFS 108, MSFS 240, MSFS 245, MSFS 256, MSFS 257, MSFS 270, MSFS 302, MSFS 325A, MSFS 325B, MSFS 340, MSFS 351, MSFS 352, MSFS 355, MSFS 360, MSFS 364, MSFS 401, MSFS 410, MSFS 411, MSFS 412, AH 105, AH 241, ISAT 120 or ACCT 210 or ACCT 220, FIN 270.	
Approved Career Electives	5
Total	120

Mortuary Science and Funeral Service Courses

MSFS101 - Orientation to Funeral Service 101-3 Orientation to Funeral Service. Students will trace the history of funeral services from ancient times through contemporary practices with emphasis on the development of funeral practices in the United States. Students study the customs of various cultures throughout the world including customs in the United States. They will demonstrate a knowledge of funeral service organizations and will discuss current topic areas of the profession. Lecture three hours. Restricted to MSFS majors.

MSFS108 - Funeral Svc Psychology 108-3 Funeral Service Psychology. Designed to provide the student with an overview of psychology in funeral service as applied to death, grief and mourning. Students will examine interpersonal and public relations as they affect the funeral service practitioner. This course is writing intensive and reflects the College's Communication-Across-the-Curriculum initiative. Lecture three hours. Prerequisite: ENGL 101 with a grade of C or better.

MSFS210 - Accounting for FS 210-3 College Accounting for Funeral Service. This course is an introduction to basic principles of accounting theory. This subject covers financial statements and their analysis, journalizing concepts, receivables, payables, deferrals and accruals. Inventory costing methods, depreciation methods and payroll accounting are included. Applications to funeral home operations are the focus throughout the subject material.

MSFS215 - Business Law for FS 215-3 Business Law for Funeral Service. Students will learn the basic principles of business law as they relate to funeral service. Especially stressed are the bodies of law and the judicial system found in the United States of America including contracts, sales, bailments (including carriers), commercial paper, agency, employment, and business organization.

MSFS230 - Mortuary Anatomy 230-4 Mortuary Anatomy. The student will study the structure and function of the human body as a whole including: general organization, structural organization, tissues, skeletal system, nervous system, circulatory system, physiology of circulation, glands, respiratory system, digestive system, genitourinary system, integument and special senses. Lecture three hours. Prerequisite: ZOOL 115/118. Restricted to MSFS majors.

MSFS240 - Mortuary Regulations 240-3 Mortuary Regulations. The student will have knowledge of the federal, state and local regulations pertaining to the funeral profession. Studies will include the Occupational Safety and Health Administration regulations, Americans with Disabilities Act, Uniform Anatomical Gift Act, the Federal Trade Commission requirements, Rules and Regulations for the Control of Communicable Disease and other such regulations governing funeral service. Lecture three hours. Restricted to MSFS majors.

MSFS245 - Restorative Art 245-4 Restorative Art. Students will build upon knowledge of the anatomical structures of the cranial and facial areas of the human skull gained through anatomy. Students will develop a knowledge of facial proportions, modeling, expressions, and materials and techniques necessary to rebuild the human face. Laboratory assignments will include bone and tissue restoration, facial modeling, hair restorations, and others. Prerequisite: AH 241. Lab fee: \$150.

MSFS256 - Intro Microbiology 256-3 Introductory Microbiology. The student will survey microbiology: morphology, physiology, populations of microbial organisms, microbial destruction, immunology, and pathogenic agents. Lecture three hours. Prerequisite: PLB 115 or ZOOL 115 or 118 and CHEM 106. Restricted to major.

MSFS257 - Pathology 257-3 Pathology. Students will be introduced to the study of the cause, course and effects of diseases upon the human body, with stress on ways in which tissue changes affect the embalming process. Lecture three hours. Prerequisite: MSFS 256 and AH 241.

MSFS270 - Computers in FS 270-2 Computers in Funeral Service. The student will be given the opportunity to enhance their understanding of the applications of computers to the funeral profession. This course is designed to instill an appreciation for computers as an effective funeral home management tool. Lecture 2 hours. Restricted to MSFS majors.

MSFS270Q - Computers in Funeral Service 270Q-2 Computers in Funeral Service. The student will be given the opportunity to enhance their understanding of the applications of computers to the funeral profession. This course is designed to instill an appreciation for computers as an effective funeral home management tool. Lecture 2 hours. Restricted to MSFS majors. This is an online delivery course.

MSFS299 - Individual Study 299-1 to 16 Individual Study. Provides students with an opportunity to explore studies that fit a particular need or interest. Enrollment provides access to the resources of the facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Restricted to MSFS majors.

MSFS302 - Restorative Color & Cosmetics 302-3 Restorative Color and Cosmetics. The student will learn advanced procedure and techniques for restoration and cosmetology. Special attention will be placed upon pigments, visual aspects of color and color schemes, lighting, complexion types and materials, corrective shaping, rouging, waxing and powdering. Lecture two hours. Laboratory two hours. Prerequisite: MSFS 245 and MSFS 257 with grades of C or better. Lab fee: \$50.

MSFS302Q - Restorative Color and Cosmetics 302Q-3 Restorative Color and Cosmetics. The student will learn advanced procedure and techniques for restoration and cosmetology. Special attention will be placed upon pigments, visual aspects of color and color schemes, lighting, complexion types and materials, corrective shaping, rouging, waxing and powdering. Lecture two hours. Laboratory two hours. Prerequisite: MSFS 245 and MSFS 257 with grades of C or better.

MSFS325A - Embalming Theory & Practice I 325A-4 Embalming Theory and Practice I. The student will be introduced to techniques of embalming through a study of the body, sanitation, embalming agents, instruments and methods of embalming. The student studies the theory, practices and techniques of sanitation as well as restoration and preservation of deceased human remains. Laboratory experiences consist of embalming deceased remains and of other related activities. Lecture three hours. Laboratory two hours. Prerequisite: MSFS 245, MSFS 257, Allied Health 241 or equivalent Anatomy with grades of C or better and proof of Hepatitis B vaccine or Titre test. Restricted to Mortuary Science and Funeral Service majors. Lab fee: \$50.

MSFS325B - Embalming Theory/Practice II 325B-4 Embalming Theory and Practice II. The student will study the anatomy of the circulatory system, the autopsied case, the cavity embalming, the contents of the thoracic and abdominal cavities and various embalming treatments. Laboratory experience is a continuation of 325A. Lecture three hours. Laboratory two hours. Must be taken in A, B sequence. Prerequisite: MSFS 245, MSFS 257, Allied Health 241 or equivalent Anatomy with grades of C or better and proof of Hepatitis B vaccine or Titre test. Restricted to Mortuary Science and Funeral Service majors. Lab fee: \$50.

MSFS340 - Mortuary Law 340-3 Mortuary Law. Deals with the statutory laws and practices pertaining to funeral service. The student will trace the laws that govern the funeral director and the embalmer and their legal responsibilities to the consumer. Knowledge will be gained concerning the legal status of a dead human body, necessities of disposition, methods of disposition, rights and parties undertaking responsibility of disposition, custodial rights of the dead human remains, contract laws, right of disposition, control of the funeral, general rules of priority pertaining to next of kin, mental anguish, photographs, confidentiality, negligent acts by the funeral director and/or embalmer, mutilation laws, injury to pallbearers, Clergy and staff, physical impact, collection against an estate, primary obligor, estate liability, cremation, authorization, commingling of remains, personal effects, storage and shipping of remains. Lecture three hours. Prerequisite: MSFS 256, MSFS 245 with grades of C or better. Restricted to major.

MSFS350 - MSFS Subjects 350-1 to 32 Mortuary Science and Funeral Service Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. Mandatory Pass/Fail. Restricted to MSFS majors.

MSFS351 - Funeral Service Mgmt 351-4 Funeral Service Management. The student will learn skills necessary to effectively manage a funeral home. Included are the funeral director's responsibilities from the first call to the completion of the funeral service. Topics include completing pre-need and post-need

forms, human resource management, financial management, facilities management, maintenance of records, religious ceremonies, and professional ethics. Lecture four hours. Prerequisite: MSFS 240.

MSFS351Q - Funeral Service Mgmt 351Q-4 Funeral Service Management. The student will learn skills necessary to effectively manage a funeral home. Included are the funeral director's responsibilities from the first call to the completion of the funeral service. Topics include completing pre-need and post-need forms, human resource management, financial management, facilities management, maintenance of records, religious ceremonies, and professional ethics. Lecture four hours. Prerequisite: MSFS 240. This is an online delivery course.

MSFS352 - MSFS Mrchd & Mrkting 352-3 Funeral Service Merchandising and Marketing. The student will learn the fundamentals of merchandising, product mix and pricing of funeral service merchandise (i.e., caskets, burial vaults, urns, etc.). Other topics include developing a funeral home marketing plan and applying small business marketing techniques to funeral homes. Lecture three hours. Co-requisite: MSFS 351.

MSFS355 - Embalming Chemistry 355-3 Embalming Chemistry. The student will study the chemistry of the body, sanitation, toxicology, chemical changes in deceased human remains, disinfection, and embalming fluids. Laboratory experiences in 325A will complement lecture material. Lecture three hours. Co-requisite: MSFS 325A. Prerequisite: CHEM 106 and MSFS 240 or concurrent enrollment in MSFS 240.

MSFS360 - Adv Embalming Procedures 360-4 Advanced Embalming Procedures. The student will study the proper procedures of embalming and other necessary preparations of special cases. Studies will include techniques and procedures used for embalming unique cases such as decomposition cases, burn victims, car accident victims, and other traumatic faces of death. Students will be required to submit several written research papers and present oral presentations of specific topics throughout the semester. Lecture four hours. Prerequisites: MSFS 245, 257, 325A, 325B and 355 with grades of C or better.

MSFS364 - Cremation Practices 364-3 Principles and Practices of Cremation. The student will focus on the important considerations when working with those that choose cremation as a form of disposition. This includes proper identification, legal authorization, use of third party crematories, required forms, cremation containers, containers for cremated deceased, cremation merchandise, services in conjunction with cremation, arranging for disposition of cremated deceased, shipping cremated deceased, FTC compliance, and the history of cremation.

MSFS364Q - Cremation Practices 364Q-3 Principles and Practices of Cremation. The student will focus on the important considerations when working with those that choose cremation as a form of disposition. This includes proper identification, legal authorization, use of third party crematories, required forms, cremation containers, containers for cremated deceased, cremation merchandise, services in conjunction with cremation, arranging for disposition of cremated deceased, shipping cremated deceased, FTC compliance, and the history of cremation.

MSFS369 - Death and Cremation 369-3 Cremation and the Disposing of the Dead. The student will study the process of dying and the history of death disposal with emphasis on cremation. The student will examine how religion has played a part in the increase/decrease in acceptance as cremation being a method of disposing of the dead. Students will review cremation trends in the U.S. and the legal formality of cremation authorization and the cremation process. Students will explore how the death care industry is marketing cremation and analyze how the industry has adapted to consumer demands.

MSFS375Q - Research Project 375Q-4 Research Project. This course requires the selection and investigation of a research topic culminating in a paper to satisfy the research requirement for the Bachelor of Science degree in Mortuary Science and Funeral Service.

MSFS399 - Occupational Internship 399-1 to 8 Occupational Internship in Mortuary Science. The student will be assigned to a University approved organization engaged in activities related to the student's academic program and career goals. The student will participate in activities related to funeral service that make a positive impact on or positive outreach for funeral service. These activities can include, but not limited to, an active holiday program, an outreach program, an aftercare program or other

community activities. The student will perform duties assigned by the immediate supervisor or the course coordinator. Reports and assignments must be completed by the student. Mandatory Pass/Fail.

MSFS401 - Funeral Service Counseling 401-2 Funeral Service Counseling. The student will be taught specific counseling procedures when counseling the bereaved family. Specific attention will be paid to the counseling and communication techniques and skills that will assist individual family members with handling grief and the mourning process. In addition, students will explore the concepts of pre-need and after-care services. Prerequisites: MSFS 108 or PSYC 102 or consent of school.

MSFS410 - FS Internship-Management 410-5 Funeral Service Internship-Management. Students will be assigned to a University approved funeral home learning in actual practice situations: functional organization, procedures, and policies of the establishment. The course is 14 weeks in length. Not for graduate credit. Prerequisite: all other requirements of the MSFS major must be met including a grade point average of at least 2.0 in major. Co-requisites: MSFS 411 and 412.

MSFS411 - FS Internship-Embalming 411-5 Funeral Service Internship-Embalming. Students will be assigned to a University approved funeral home to be given the opportunity to learn embalming techniques by active participation in the preparation room under the direct supervision of a licensed embalmer. The course is 14 weeks in length. Not for graduate credit. Restriction: all other requirements of the MSFS major must be met including a grade point average of at least 2.0 in major. Co-requisites: MSFS 410 and 412. Special approval needed from the advisor.

MSFS412 - Funeral Service Seminar 412-2 Funeral Service Seminar. Formal discussions are held to evaluate the experiences and progress of the participants in the internship program. The student will participate in mock funeral arrangements and will evaluate themselves on style, knowledge, and confidence via video. The second part of the seminar is a review for the National Board Exam. The student must pass the Mock Board Exam, given only two attempts, to successfully complete the course. Mandatory Pass/Fail. Not for graduate credit. Co-requisites: MSFS 410 and 411.

MSFS415 - On Dying and Death 415-3 On Dying and Death. Students will study the processes of death, grief, and bereavement. Emphasis on the practical aspects of coping with the many problems concerning death. Not for graduate credit.

Mortuary Science and Funeral Service Faculty

Fleege, Anthony T., Associate Professor, M.B.A., Southern Illinois University Carbondale, 1999.

Griffith, Cydney A., Associate Professor, M.S., Southern Illinois University Carbondale, 1991.

Salazar, Abel, Clinical Instructor, M.S.Ed., Southern Illinois University Carbondale, 2015.

Shaw, Thomas, Associate Professor and Associate Dean, Ph.D., Southern Illinois University Carbondale, 2005.

Music

The School of Music is an accredited institutional member of the National Association of Schools of Music, 11250 Roger Bacon Drive, Suite 21, Reston, Virginia 20190.

Admission and Advisement. All students who plan to major in Music will first be admitted as Pre-Music students provided they meet the University's admission policy. Incoming freshmen and transfer students are required to audition in person or by recording (if outside of a 250 mile radius of the University) prior to admittance to the desired specialty in music. Following a successful audition, students will be granted the status of music major and be allowed to register for classes in the desired specialty. Criteria used for admission to the School of Music may be above and beyond the University standards for general admission. For more information, please contact the School of Music at 618/536-8742.

Pre-Music Major. All students in the Pre-Music major must successfully complete the Music Major Audition to be classified as a music major. Students in the Pre-Music major and students who have not successfully passed the music major audition will only be allowed to take the following courses: MUS 040

A-X, MUS 101 with a major ensemble (MUS 011, MUS 013, MUS 014, MUS 017, MUS 018, MUS 020, MUS 022, MUS 365G). None of these courses will count towards graduation requirements. Students are allowed a maximum of two semesters of Pre-Music major, and should be aware that this designation may extend their time towards graduation.

Transferring students are required to audition in the student's applied area for admission to the music program and will be placed at the appropriate applied course level. Music credits earned at other accredited institutions will apply toward requirements, but the transferring student remains subject to evaluation by the Undergraduate Program Director for proper placement in the music curriculum.

All pre-music and music majors will be advised by the School of Music advisor for the purpose of completing the courses required.

All Music majors must maintain satisfactory membership in one of the following ensembles: MUS 011, MUS 366A-F every term in residence. Students are exempt from this requirement during the session of student teaching. Students who are unable to meet the major ensemble entrance requirements for one semester will be placed on probation by the School of Music. Students who are denied entrance into a major ensemble a second time will be reviewed by the undergraduate committee for possible continued probation or suspension from all music degree programs. The assignment to major ensembles must be compatible with the student's applied field. Instrumental Music Education students must enroll in Marching Salukis for a minimum of two semesters. Students also may elect additional large or small ensembles, not to exceed three in any one session.

Each student with a major or minor in music must designate a principal applied field and complete the credits specified within the selected specialization. Changes in the principal applied field are permissible so long as the student accumulates the required credit total and meets the required level of proficiency.

Credits in one's principal applied field are based on private lessons with a member of the faculty; weekly participation in Studio Hour and Convocations (Tuesday, at 10:00 a.m.); and recorded attendance each semester at seven campus recitals or concerts, approved for that purpose by the School of Music faculty. The student may not be a participant. Students who fail to fulfill either the Studio Hour or attendance at campus recitals or concerts requirement will receive a grade of Incomplete, which can be removed only by making up the deficiency during the ensuing semester. A student who wishes to attempt the performance specialization in applied music must have prior approval of the appropriate faculty jury, and thereafter enrolls for and receives one lesson per week for three credits per semester.

A student may elect private instruction in a second field or fields, but this is at the MUS 040 level for one credit per semester since the studio hour and recital attendance requirements pertain only to the principal applied field.

Students not majoring or minoring in music may elect private applied music instruction if they can exhibit sufficient ability and faculty loads will allow. Registration is at the MUS 040 level for one credit per semester, with no studio hour or recital attendance requirement. Those wishing such instruction should arrange for an interview and audition with the appropriate instructor.

Students specializing in music education should apply for admission to the Teacher Education Program as soon as they have accumulated 30 semester hours of credit. After being admitted, they must complete a series of specific requirements in order to qualify for student teaching and for the Illinois teaching license. Additional information is given under Teacher Education Program, and Curriculum and Instruction. Students specializing in Music Education must maintain a grade of C or better in all courses required for the music degree.

Upper Division Examination, 240 Level Exit Examination

All music majors wishing to study at the 300 applied level or above must pass an upper division examination in order to be admitted to the MUS 340 level of applied music. It is normally taken before finishing 60 hours of academic study and in the second semester of MUS 240. All Bachelor of Arts degree students must pass a MUS 240 level exit exam prior to registering for MUS 487 or MUS 488 Senior Project. The exam is normally taken in the second semester of MUS 240A-X. The Upper Division and 240 exit examinations consist of an applied music jury performance. The upper division examination consists of an applied music jury performance before the entire music faculty.

Financial Information

Special grants and awards are available to students enrolled in the School of Music who are qualified and in need of financial assistance. Opportunities for employment in the student work program are excellent. In addition, there are scholarships (tuition awards) and loan programs available through the Office of Student Work and Financial Assistance.

Students are responsible for purchasing their own textbooks, solo literature, and incidental supplies for music lessons and classes.

Bachelor of Music Degree, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Including MUS 357A as University Core Curriculum substitute	
Requirements for Major in Music	81
Theory: MUS 104A, MUS 104B; MUS 105A, MUS 105B; MUS 204A, MUS 204B; MUS 205A, MUS 205B; MUS 308; MUS 321; MUS 322	22
History-Literature: MUS 102; MUS 357A, MUS 357B	(3)+5
Conducting: MUS 316	1
Partial Recital: MUS 398 ¹	1
Piano Class: MUS 030 A-D ²	4
Specialization ³	48-52
Total	120

1 Theory/Composition Specialization takes MUS 498 in place of MUS 398

2 Studio Jazz Performance Specialization only takes MUS 030 A-B

3 Keyboard Specialization does not take MUS 030 A-D

Music Major - Performance Specialization Instrumental (Standard Orchestral and Wind Instruments)

Degree Requirements	Credit Hours
MUS 140 A-X, MUS 440 A-Y, principal field, 8 semesters	21
MUS 011, MUS 366 A-F	8
MUS 498	2

Degree Requirements	Credit Hours
MUS 461	3
MUS 324 and MUS 326	2
MUS 407; MUS 421 or any of MUS 470, MUS 471, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B	6
MUS 365 A-J	3
Approved music electives ¹	3
Total	48

1 Music Elective must be at the 300/400 level.

Music Major - Performance Specialization Studio Jazz

Degree Requirements	Credit Hours
MUS 366G	8
MUS 365J	4
MUS 112	1
MUS 113	1
MUS 140 A-X, MUS 440 A-Y, primary instruments, 8 semesters ¹	19
MUS 231A, MUS 231B	2
MUS 331A, MUS 331B	2
MUS 335	2
MUS 474	2
Approved music electives	2
MUS 430A, MUS 430B	4
MUS 498	2
Total	50

1 Majors with saxophone as a primary instrument must also take one semester each of applied clarinet and flute in place of electives.

Music Major - Performance Specialization Guitar

Degree Requirements	Credit Hours
MUS 140 A-X, MUS 440 A-Y, principal field, 8 semesters	21
MUS 366D	8
MUS 107A and MUS 107B	2
MUS 498	2
MUS 250A and MUS 250B	2
MUS 374, MUS 461	5
MUS 324 and MUS 326	2
MUS 365 A-J	3
Approved music electives	3
Total	48

Music Major - Performance Specialization, Keyboard (Piano, Organ and Harpsichord)

Degree Requirements	Credit Hours
MUS 140 A-X; MUS 440 A-Y, 8 semesters	21
MUS 011, MUS 366 A-F	6
MUS 498	2
MUS 461	3
MUS 407; MUS 421, or any of MUS 470, MUS 471, MUS 472, MUS 474, MUS 475, MUS 476, MUS 477, MUS 478A, MUS 478B	5
MUS 341	2
MUS 365F	2
MUS 479A and MUS 479I	4
Approved music electives	7
Total	52

Music Major - Performance Specialization Voice

Degree Requirements	Credit Hours
MUS 140 A-X - MUS 440 A-Y, 8 semesters	21
MUS 366 A-F	8
MUS 498	2
MUS 461	3
MUS 479	2
Approved foreign language, 2 semesters	6
MUS 401, MUS 402	2
MUS 363A, MUS 363B	4
Total	48

Music Major - Music Theory/Composition Specialization

Degree Requirements	Credit Hours
MUS 140- MUS 340 A-X, principal field, 6 semesters	12
MUS 011, MUS 366 A-F	8
MUS 280	4
MUS 380	4
MUS 480	4
MUS 324 and MUS 326	2
MUS 406	2
MUS 421	2
MUS 470 series	6
Approved music electives, 300 level or above	3
MUS 498	2
Total	49

Bachelor of Music Degree, College of Liberal Arts

Music Major - Music Education Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Must include UNIV 101J, MUS 357A or MUS 357B, EDUC 211, EDUC 214	
Requirements for Major in Music	59
Theory: MUS 104A, MUS 104B, MUS 105A, MUS 105B; MUS 204A, MUS 204B; MUS 205A, MUS 205B; MUS 308 or MUS 321 or MUS 322; MUS 324	19
History Literature: MUS 102, MUS 357A, MUS 357B	(3) +5
MUS 366 A-F	8
MUS 140 - MUS 340, principal applied field, 7 semesters	7
MUS 398 half recital	1
MUS 300	2
MUS 304	2
MUS 305	2
MUS 306	2
Music Education Specialization	
Instrumental Emphasis	11
MUS 030A, MUS 030B	2
MUS 033A, MUS 033B, MUS 034, MUS 035	5
MUS 316, MUS 318	3
MUS 031	1
or	
Music Education Specialization	
Choral/General emphasis	11

Degree Requirements	Credit Hours
MUS 030 A-D	4
MUS 035, MUS 036A; MUS 032 or MUS 033A or MUS 034	3
MUS 316, MUS 317	3
MUS 363A	1
Professional Education Requirements	24
EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, EDUC 401A	
Additional Licensure Requirements - CI 360	3
Total	125

Bachelor of Arts Degree, College of Liberal Arts

The Bachelor of Arts in Music degree is a liberal arts degree individually tailored to meet the educational goals of each student pursuing it. The Bachelor of Arts in Music (Liberal Arts specialization), essentially a double major, offers considerable flexibility to students by allowing them to combine their coursework in Music and the University Core Curriculum with another Core Elective area of their choice. The Bachelor of Arts in Music (Liberal Arts specialization) requires a core of 16 hours of music literature and music theory courses.

Of the 52 hours required to complete the Bachelor of Arts in Music (Liberal Arts specialization), the required courses are MUS 030A,B, MUS 204A,B, MUS 205A,B, MUS 488 and eight hours of approved music electives. In addition, at least one year of foreign language is required. This can be met by one of the following: (a) passing an six-hour 100-level sequence in one language; (b) earning six hours of 100-level credit in one language by proficiency examination; or (c) completing three years of one language in high school with no grade lower than C. The 30 Elective Core hours necessary to complete the degree program are selected by the student with the approval of the student's faculty sponsor and the undergraduate committee. This planning should be done during the first semester of the student's admittance to the School of Music with undergraduate committee approval secured not later than the end of the second semester. Changes may be made if agreed upon by the student, the undergraduate committee and the student's faculty sponsor. At least 42 hours toward the Liberal Arts degree must be at the 300-400 level. The Bachelor of Arts in Music does not provide the necessary prerequisites for graduate study in a Master of Music degree program.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Including MUS 357A as University Core Curriculum substitute	
Requirements for Major in Music	81
Theory: MUS 104A, MUS 104B; MUS 105A, MUS 104B	8

Degree Requirements	Credit Hours
Literature and History: MUS 102, MUS 357A, MUS 357B	(3)+5
MUS 011, MUS 366 A-F	8
Applied MUS 140 A-X - MUS 240 A-X, 4 semesters	8
Specialization	52
Total	120

Music Major - Liberal Arts Specialization

Degree Requirements	Credit Hours
MUS 030A, MUS 030B	2
MUS 204A, MUS 204B	2
MUS 205A, MUS 205B	6
MUS 488	2
Foreign Language	6
Elective Core	27
Total	52

Music Major - Music (Business) Specialization

Degree Requirements	Credit Hours
Required Music Courses	
MUS 030A, MUS 030B	2
MUS 031	1
MUS 323 or three of the following: MUS 032, MUS 033A, MUS 033B, MUS 034, MUS 035, MUS 036A, MUS 036B	3
MUS 307	2
MUS 174	3

Degree Requirements	Credit Hours
MUS 487	3
Approved Music Electives	11
Required Business Courses ¹	
ACCT 220, ACCT 230	6
MGMT 304	3
ECON 240 ²	(3)
FIN 280	3
MKTG 304, MKTG 363, MKTG 401, MKTG 438	12
Approved Business Electives	3
Total	52

¹ Up to six hours in related areas may be substituted for Required Business Courses with the approval of the undergraduate committee.

² ECON 240 must be taken as a Core Curriculum Social Science course.

Musical Theater

The School of Music and the Department of Theater co-sponsor a BFA in Musical Theater degree. Please refer to the Theater section for course description and requirements.

Music Minor

The minor in music totals 16 credit hours and includes: MUS 030A, MUS 104A, MUS 105A; two semesters of performing ensembles, two credit hours; and four credits of applied lessons (MUS 040A-X - MUS 440A-Y) where a minimum of two credits must be earned at the MUS 140A-X level or above. Students must also complete MUS 102, two credit hours; and three credits of approved music electives. Students may elect MUS 103, three credit hours, in place of MUS 102. If MUS 103 is taken, only two credits of approved music electives are required. Students wishing to pursue the music minor curriculum must make a declaration of intent with the Music Advisor.

Music Courses

MUS011 - Marching Salukis 011-1 to 4 (1,1,1,1) Marching Salukis. Fall semester only. Open to all students with experience in bands. Performs at all home football games, and one or two away. Counts as a major ensemble, one of which must be taken each semester by resident music majors. Not more than four hours count toward undergraduate degree. Prerequisite: Experience in bands. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS012 - Pep Band 012-1 to 8 (1,1,1,1,1,1,1,1) Pep Band. A select group which performs at all home basketball games. Not more than eight hours count toward undergraduate degree. Prerequisite: audition prior to first registration. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS016 - Jazz Combos 016-1 to 8 (1,1,1,1,1,1,1,1) Jazz Combos. A select group, performing literature scored for this instrumentation. Two or three concerts per year and tour as feasible. Prerequisite: audition prior to first registration. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS030A - Piano Class- Level 1 030A-1 Piano Class-Level 1. Designed to develop functional command of basic keyboard skills needed in the further study of music and the teaching of music. Take in sequence unless assigned advanced placement by instructor. Restricted to major or minor in music, elementary education, early childhood education, Musical Theater or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS030B - Piano Class 2 030B-1 Piano Class-Level 2. Designed to develop functional command of basic keyboard skills needed in the further study of music and the teaching of music. Take in sequence unless assigned advanced placement by instructor. Restricted to major or minor in music, elementary education, or early childhood education. Prerequisite: MUS 030A with C or better or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS030C - Piano Class 3 030C-1 Piano Class-Level 3. Designed to develop functional command of basic keyboard skills needed in the further study of music and the teaching of music. Take in sequence unless assigned advanced placement by instructor. Restricted to major or minor in music, elementary education, or early childhood education. Prerequisite: MUS 030B with C or better or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS030D - Piano Class 4 030D-1 Piano Class-Level 4. Designed to develop functional command of basic keyboard skills needed in the further study of music and the teaching of music. Take in sequence unless assigned advanced placement by instructor. Restricted to major or minor in music, elementary education, or early childhood education. Prerequisite: MUS 030C with C or better or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS031 - Voice Class 031-1 Voice Class. Designed to develop functional command of basic vocal skills needed in teaching music. Restricted to music major or minor or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS032 - Strings Techniques Class 032-1 Strings Techniques Class. Designed to develop essential techniques and principles which can be used in teaching young string pupils. Restricted to music major or minor or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS033A - Woodwind Techniques A 033A-1 Woodwind Techniques Class-Clarinet, Saxophone. Designed to develop essential techniques and principles which can be used in teaching young woodwind pupils. Students will begin on one instrument and shift to another at midterm. Restricted to music major or minor or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS033B - Woodwind Techniques B 033B-1 Woodwind Techniques Class-Flute, Double Reeds. Designed to develop essential techniques and principles which can be used in teaching young woodwind pupils. Students will begin on one instrument and shift to another at midterm. Restricted to music major or minor or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS034 - Brass Techniques 034-1 Brass Techniques Class. Trumpet, French horn, trombone, tuba. Designed to develop essential techniques and principles which can be employed in teaching beginning brass pupils. Students will begin with one instrument and shift to others throughout the semester. Restricted to music major or minor or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS035 - Percussion Techniques 035-1 Percussion Techniques Class. Designed to develop basic techniques and principles which can be employed in teaching young percussion pupils. Restricted to music major or minor or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS036A - Guitar Class-Level 1 036A-1 Guitar Class-Level 1. Designed to develop basic techniques and principles which can be employed in teaching music. Restricted to major or minor in music, elementary education, or early childhood education, or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS036B - Guitar Class 2 036B-1 Guitar Class-Level 2. Designed to develop basic techniques and principles which can be employed in teaching music. Restricted to major or minor in music, elementary education, or early childhood education. Prerequisite: MUS 036A or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040A - Applied Music-Flute 040A-1-3 Applied Music-Flute. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040B - Applied Music-Oboe 040B-1-3 Applied Music-Oboe. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040C - Applied Music-Clarinet 040C-1-3 Applied Music-Clarinet. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040D - Applied Music-Bassoon 040D-1-3 Applied Music-Bassoon. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040E - Applied Music-Saxophone 040E-1-3 Applied Music-Saxophone. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040F - Applied Music-Horn 040F-1-3 Applied Music-Horn. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour

MUS040G - Applied Music-Trumpet 040G-1-3 Applied Music-Trumpet. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040H - Applied Music-Trombone 040H-1-3 Applied Music-Trombone. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040I - Applied Music-Euphonium 040I-1-3 Applied Music-Euphonium. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040J - Applied Music-Tuba 040J-1-3 Applied Music-Tuba. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040K - Applied Music-Percussion 040K-1-3 Applied Music-Percussion. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040L - Applied Music-Violin 040L-1-3 Applied Music-Violin. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040M - Applied Music-Viola 040M-1-3 Applied Music-Viola. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040N - Applied Music-Cello 040N-1-3 Applied Music-Cello. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040O - Applied Music-Double Bass 040O-1-3 Applied Music-Double Bass. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040P - Applied Music-Voice 040P-1-3 Applied Music-Voice. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040Q - Applied Music-Piano 040Q-1-3 Applied Music-Piano. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040R - Applied Music-Organ 040R-1-3 Applied Music-Organ. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040S - Applied Mus-Harpsichord 040S-1-3 Applied Music-Harpsichord. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040T - Applied Music-Guitar 040T-1-3 Applied Music-Guitar. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040U - Applied Music-Recorder 040U-1-3 Applied Music-Recorder. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040V - Applied Music-Coaching 040V-1-3 Applied Music-Coaching. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS040X - Appl Music-Mus Theater Voice 040X-1 to 3 Applied Music-Musical Theater Voice. May be repeated for credit as long as passing grade is maintained. Music majors and minors enroll for 1 or 2 credits on their principal instrument as designated by their degree requirements. All music majors and minors also attend studio class on Tuesdays at 10:00, and perform end of semester jury. Non-music majors and music majors taking a second instrument, enroll for one credit taking a half-hour lesson per week, or two credits for a one-hour lesson per week. No studio class or jury is required for non-music majors or secondary instruments. Applied music (X) not available to students outside the Music Theater degree. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS101 - Music Fundamentals 101-3 Music Fundamentals. Rudiments of music for those with little or no musical background. One lecture and one piano laboratory session per week. Provides basic music vocabulary and keyboard competency for Curriculum and Instruction 325, 326. Restricted to PMUS, Music Major or Minor, or consent of instructor.

MUS102 - Survey of Music Literature 102-2 Survey of Music Literature. Characteristic forms and styles. Analysis and listening. Examples from the leading composers of each era. Restricted to music major or minor, or consent of instructor.

MUS103 - Music Understanding 103-3 Music Understanding. (University Core Curriculum) [IAI Course: F1 900] Through lectures, in-class individual and group activities, readings, and discussions, students will learn to place musical works in their historical and cultural contexts by understanding the development of western art music. Students will also learn the listening skills necessary to perceive various fundamental aspects of any work of music.

MUS104A - Aural Skills I 104A-1 Aural Skills. A laboratory course designed to complement MUS 105A. Practice in recognition and singing of basic pitch and rhythm materials, and their realization in standard musical notation. For those planning a major or minor in music, take A and B in sequence or with prior consent of instructor, concurrently. Restricted to music major, minor or consent of instructor.

MUS104B - Aural Skills II 104B-1 Aural Skills. A laboratory course designed to complement MUS 105B. Practice in recognition and singing of basic pitch and rhythm materials, and their realization in standard musical notation. For those planning a major or minor in music, take A and B in sequence or with prior consent of instructor, concurrently. Prerequisite: grade of C or better in MUS 104A for registration in B section.

MUS105A - Basic Harmony I 105A-3 Basic Harmony. Study of traditional diatonic tonal materials and standard notational practice. Includes keyboard skills. For those with performing experience and planning a major or minor in music. Take A and B in sequence. Prerequisite: concurrent registration in MUS 104 or equivalent aural skill, satisfactory theory placement score or grade of C or better in MUS 101.

MUS105B - Basic Harmony II 105B-3 Basic Harmony. Study of traditional diatonic tonal materials and standard notational practice. Includes keyboard skills. For those with performing experience and planning a major or minor in music. Take A and B in sequence. Prerequisite: concurrent registration in MUS 104B or equivalent aural skill, grade of C or better in MUS 105A prior to enrollment in MUS 105B.

MUS106 - The History of Rock and Roll 106-3 The History of Rock and Roll. (University Core Curriculum) A history and appreciation of the musical and cultural melting pot of 1950's rock & roll and early 1960's pop. Includes overview of the African American roots and female ancestors and influences on blues, boogie-woogie, jazz, swing, country & western, gospel and popular music, and the crossover success of rhythm & blues acts that marked the true birth of rock & roll. Cultural influences, racial background and gender identification are relevant.

MUS107A - Harmony for Fretted Inst 107A-1 Applied Harmony for Fretted Instruments. Application of basic harmonic functions to the fretted instruments including guitar. Concurrent enrollment in MUS 140-540T.

MUS107B - Harmony for Fretted Inst 107B-1 Applied Harmony for Fretted Instruments. Continued application of basic harmonic functions to the fretted instruments including guitar. Prerequisite: MUS 107A and concurrent enrollment in MUS 140-540T.

MUS110A - Intro to Piano Pedagogy 110A-2 Introduction to Piano Pedagogy. Introduction to a broad range of studies that influence the development of effective piano teaching. Seminar discussions, lectures, observation of piano teaching, piano studies, readings, listening projects and written essays deal with the history of piano pedagogy and performance, studies of teaching and learning concepts of music education and educational psychology, piano literature, keyboard musicianship and practical aspects of teaching.

MUS110B - Intro to Piano Pedagogy 110B-2 Introduction to Piano Pedagogy. Introduction to a broad range of studies that influence the development of effective piano teaching. Seminar discussions, lectures, observation of piano teaching, piano studies, readings, listening projects and written essays deal

with the history of piano pedagogy and performance, studies of teaching and learning concepts of music education and educational psychology, piano literature, keyboard musicianship and practical aspects of teaching.

MUS112 - Jazz Fundamentals 112-1 Jazz Fundamentals. Introduction to the grammar, vocabulary and structures of the jazz language. Topics include basic chord construction, modes of major and minor scales, basic substitution and function, voicing and connecting chords, polychord nomenclature, symmetrical altered and synthetic scales, and five part harmony. Prerequisite: MUS 105A with a C or better.

MUS113 - Functional Jazz Piano 113-1 Functional Jazz Piano. Designed to develop techniques and concepts for the studio jazz performer. Realization of jazz harmonies, comping, shell voicing, two-hand voicings, and stylistic trends will be explored. Prerequisite: MUS 112 with a C or higher.

MUS140A - Applied Music-Flute 140A-1-3 Applied Music-Flute. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140B - Applied Music-Oboe 140B-1-3 Applied Music-Oboe. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140C - Applied Music-Clarinet 140C-1-3 Applied Music-Clarinet. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140D - Applied Music-Bassoon 140D-1-3 Applied Music-Bassoon. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140E - Applied Music-Saxophone 140E-1-3 Applied Music-Saxophone. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140F - Applied Music-Horn 140F-1-3 Applied Music-Horn. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of

the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140G - Applied Music-Trumpet 140G-1-3 Applied Music-Trumpet. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140H - Applied Music-Trombone 140H-1-3 Applied Music-Trombone. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140I - Applied Music-Euphonium 140I-1-3 Applied Music-Euphonium. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140J - Applied Music-Tuba 140J-1-3 Applied Music-Tuba. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140K - Applied Music-Percussion 140K-1-3 Applied Music-Percussion. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140L - Applied Music-Violin 140L-1-3 Applied Music-Violin. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140M - Applied Music-Viola 140M-1-3 Applied Music-Viola. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140N - Applied Music-Cello 140N-1-3 Applied Music-Cello. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140O - Applied Music-Double Bass 140O-1-3 Applied Music-Double Bass. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140P - Applied Music-Voice 140P-1-3 Applied Music-Voice. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140Q - Applied Music-Piano 140Q-1-3 Applied Music-Piano. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140R - Applied Music-Organ 140R-1-3 Applied Music-Organ. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140S - Applied Mus-Harpsichord 140S-1-3 Applied Music-Harpsichord. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six

hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140T - Applied Music-Guitar 140T-1-3 Applied Music-Guitar. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140U - Applied Music-Recorder 140U-1-3 Applied Music-Recorder. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140V - Applied Music-Coaching 140V-1-3 Applied Music-Coaching. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS140X - Appl Music-Mus Theater Voice 140X-1 to 3 Applied Music-Musical Theater Voice. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: three or more years of prior study or performing experience, or two semesters of C or better at 040 level or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS203 - Div & Pop Music American Cltre 203-3 Diversity and Popular Music in American Culture. (University Core Curriculum) [IAI Major Course: F1 905D] A study of the development of American popular music, particularly in relation to the different cultural groups which spawned it.

MUS204A - Advanced Aural Skills 204A-1 Advanced Aural Skills. Continuation of MUS 104. Designed to complement MUS 205A. Prerequisite: MUS 104B with a grade of C or better.

MUS204B - Advanced Aural Skills 204B-1 Advanced Aural Skills. Continuation of MUS 204A. Designed to complement MUS 205B. Prerequisite: MUS 204A with a grade of C or better.

MUS205A - Advanced Harmony 205A-3 Advanced Harmony. The study of 19th Century Western European tonal materials, including keyboard skills. Prerequisite: MUS 104B and 105B with a grade of C or better and concurrent registration of MUS 204A.

MUS205B - Advanced Harmony 205B-3 Advanced Harmony. The study of 19th Century Western European tonal materials, including keyboard skills. Prerequisite: MUS 204A and 205A with a grade of C or better and concurrent registration of MUS 204B.

MUS210 - Analytic Techniqs for Pianist 210-2 Analytic Techniques for the Pianist. Studies the process by which piano teachers analyze piano music and performance. Extensive projects in piano music analysis, sight-reading, interpreting and memorizing piano compositions, lecture/discussions, reading and

listening assignments and observation of studio and piano class teaching provide increasing readiness for piano teaching as it relies on analytic and problem-solving techniques.

MUS211 - Piano Literature Seminar 211-2 Piano Literature Seminar. A survey course that acquaints students with piano music for teaching at all levels of advancement from baroque, classical, romantic and contemporary music style periods. Piano literature, sight-reading, recorded music listening assignments, score study, writing assignments and lecture/performance presentations in class include studies of piano methods, piano music editions, collections and publishers highlighting the keyboard literature of sixteen major composers.

MUS230 - Marching Band Techniques 230-2 Marching Band Techniques. Course designed to develop skills, obtain knowledge and study the application of methods, techniques and systems related to the administration of a high school/college marching band program. The course will present a logical and systematic approach for music educators to develop traditional and contemporary marching and music styles and fundamentals. A specific system of conceiving, writing and teaching marching band shows will be presented.

MUS231A - Beginning Jazz Improv 231A-1 Beginning Jazz Improvisation. Traditional jazz song forms, basic chord progressions, style and rhythm as it relates to improvised jazz performance. Prerequisite: permit required.

MUS231B - Beg Jazz Improvisation 231B-1 Beginning Jazz Improvisation. Traditional jazz song forms, basic chord progressions, style and rhythm as it relates to improvised jazz performance. Prerequisite: MUS 231A with C or higher.

MUS240A - Applied Music-Flute 240A-1-3 Applied Music-Flute. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240B - Applied Music-Oboe 240B-1-3 Applied Music-Oboe. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240C - Applied Music-Clarinet 240C-1-3 Applied Music-Clarinet. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240D - Applied Music-Bassoon 240D-1-3 Applied Music-Bassoon. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240E - Applied Music-Saxophone 240E-1-3 Applied Music-Saxophone. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240F - Applied Music-Horn 240F-1-3 Applied Music-Horn. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240G - Applied Music-Trumpet 240G-1-3 Applied Music-Trumpet. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240H - Applied Music-Trombone 240H-1-3 Applied Music-Trombone. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240I - Applied Music-Euphonium 240I-1-3 Applied Music-Euphonium. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240J - Applied Music-Tuba 240J-1-3 Applied Music-Tuba. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240K - Applied Music-Percussion 240K-1-3 Applied Music-Percussion. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music

(X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240L - Applied Music-Violin 240L-1-3 Applied Music-Violin. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240M - Applied Music-Viola 240M-1-3 Applied Music-Viola. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240N - Applied Music-Cello 240N-1-3 Applied Music-Cello. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240O - Applied Music-Double Bass 240O-1-3 Applied Music-Double Bass. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240P - Applied Music-Voice 240P-1-3 Applied Music-Voice. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240Q - Applied Music-Piano 240Q-1-3 Applied Music-Piano. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240R - Applied Music-Organ 240R-1-3 Applied Music-Organ. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of

semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240S - Applied Music-Harpsichord 240S-1-3 Applied Music-Harpsichord. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240T - Applied Music-Guitar 240T-1-3 Applied Music-Guitar. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240U - Applied Music-Recorder 240U-1-3 Applied Music-Recorder. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240V - Applied Music-Coaching 240V-1-3 Applied Music-Coaching. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS240X - Appl Music-Mus Theater Voice 240X-1 to 3 Applied Music-Musical Theater Voice. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: MUS 140 with C or better or consent of instructor. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS250A - History of Fretted Instruments 250A-1 History and Literature of the Guitar and Related Fretted Instruments. A survey of the history and literature of the guitar and related fretted instruments from the Renaissance to the present with emphasis on interpretation.

MUS250B - History of Fretted Instruments 250B-1 History and Literature of the Guitar and Related Fretted Instruments. Continuation of MUS 250A, surveying the history and literature of the guitar and related fretted instruments from the Renaissance to the present with emphasis on interpretation. Prerequisite: MUS 250A.

MUS257 - Internship 257-1 to 12 Intern-Work Experience. Practical experience in the music industry, under the supervision of professionals outside the University setting. Open primarily to candidates for

the Bachelor of Arts degree in music (business) and students in the Department of Radio, Television, & Digital Media. Other degree seeking students may enroll with special approval from the instructor.

MUS280 - Beginning Composition 280-2 to 4 (2,2) Beginning Composition. Application of contemporary compositional techniques. Prerequisite: MUS 105B or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS300 - Eval Teach & Learn in Music 300-2 Evaluation of Teaching and Learning in Music. Systematic assessment in music education. Topics include constructing and using teacher-made formal assessments (tests in several formats, rating scales, rubrics), interpreting test results, evaluating tests and test items, interpretation and use of standardized tests in music (aptitude, achievement, others), procedures for determining and reporting grades, procedures for measuring instructional effectiveness, record-keeping, and the use of questioning for informal and formative assessment.

MUS303I - Women, Blues & Literature 303I-3 Women, Blues and Literature. (Same as AFR 303I, WGSS 303I) (University Core Curriculum) Explores traditional aesthetic processes of the blues as a mode of self expression. Examines the images/voices projected by vaudeville blues women (1920s/30s), along with various manifestations/extensions - instrumental and vocal, musical and literary-from fiction and poetry to jazz, R&B, and rap. In-depth analysis of blues music and literature.

MUS304 - General Music in Schls K-12 304-2 General Music in the Schools, K-12. Administration of the K-12 general music program, including non-performance classes. Topics: teaching methods for children, including the child's voice, Orff & Kodaly methodologies, methods for general music classrooms in upper grades, technology, music for special learners, multicultural music; classroom planning, organization, and management techniques, discipline models, and child abuse identification and reporting. Requires 26 hours of field experience in schools and other settings. Restricted to admission to Teacher Education Program. Co-requisite: EDUC 313.

MUS305 - Instrumental Music Schls 4-12 305-2 Instrumental Music in the Schools, 4-12. Administration of the school instrumental music program in grades 4-12. Topics include: philosophy of music education, the beginning and secondary instrumental programs, motivation, musicianship essentials, "good" music, comprehensive musicianship, building a curriculum, rehearsal and teaching strategies, structure and management of school instrumental programs, marching band administration and techniques, and classroom discipline theories. Students are required to observe instrumental music educators in various settings (26 hours). Prerequisite: MUS 304 with a grade of C or better. Restricted to admission to Teacher Education Program.

MUS306 - Vocal/Choral Music Schls 6-12 306-2 Vocal/Choral Music in the Schools, 6-12. Administration of the school vocal/choral music program in grades 6-12, and community choral music. Topics: the development and philosophy of choral music education, vocal development, choral literature, rehearsal techniques, literacy in the rehearsal, the structure and organization of choral ensembles, and classroom planning, organization, and management. Students are required to observe choral music educators in various settings (26 hours). Prerequisite: MUS 304 with a grade of C or better. Restricted to admission to the Teacher Education Program.

MUS307 - Computers and Music 307-2 Computers and Music. An introduction to essential computer tools for musicians. Topics covered will include notation software, DAW, composition software, and music editing applications. Prerequisite: MUS 105A with a grade of C or better.

MUS308 - Tonal Counterpoint 308-2 Tonal Counterpoint. Basic contrapuntal principles and skills, especially as applied to 18th and 19th century styles. Extensive writing practice, and analysis of stylistic models. Introduction to major contrapuntal forms. Prerequisite: MUS 205A with a grade of C or better.

MUS310 - Piano Technique Seminar 310-2 Piano Technique Seminar. An exhaustive study of three classics on the subject of piano technique by authors Reginald Gerig, Paul Roes and Abby Whiteside. This historical perspective is practically applied in a weekly routine of technical and theoretical studies at the piano. The course provides a foundation from which to deal with all aspects of piano technique development in teaching.

MUS311 - Advanced Piano Lit Seminar 311-2 Advanced Piano Literature Seminar. In-depth study of an extensive catalogue of piano works for specific selection and design of a sequential curriculum of piano

literature for teaching. Piano literature sight-reading, recorded music listening assignments and score study culminate in a final course project that details specific piano works for teaching baroque, classical, romantic and contemporary literature to students of elementary, intermediate and advanced abilities. Prerequisite: MUS 211.

MUS316 - Intro to Conducting 316-1 Introduction to Conducting. An introductory conducting course designed to teaching beginning rehearsal techniques. Restricted to music major or minor and junior standing.

MUS317 - Choral Conducting & Methods 317-2 Choral Conducting and Methods. Score reading, baton techniques, and rehearsal techniques, organization and management problems of school choral groups. Prerequisite: MUS 316 with a grade of C or better. Restricted to music major or minor and junior standing.

MUS318 - Instrumental Conducting 318-2 Instrumental Conducting. Score reading, baton techniques, and rehearsal management. Supervised application in ensemble. Prerequisite: MUS 316 with a grade of C or better. Restricted to music major or minor and junior standing.

MUS321 - Form and Analysis 321-2 Form and Analysis. Comprehensive study of harmonic and formal structures and typical stylistic traits of 18th and 19th century music. Prerequisite: MUS 205B with a grade of C or better.

MUS322 - 20th Century Music 322-2 Principles of 20th Century Music. Comprehensive study of harmonic techniques and other stylistic traits of major 20th century idioms. Prerequisite: MUS 205B with a grade of C or better.

MUS323 - Instrumentation 323-3 Instrumentation. A study of musical instruments history, construction, major manufacturers, cost, accessories, conventional ranges, transposition, traditional and expanded performance techniques, problems/idiosyncrasies, performance roles, commercial/recording applications and sources for information.

MUS324 - Instrumental/Choral Arranging 324-1 Instrumental and Choral Arranging. Practice in scoring of transcriptions, arrangements, and original compositions for standard instrumental groups and choral ensembles. Prerequisite: MUS 205B with a grade of C or better.

MUS326 - Orchestration 326-1 Orchestration. Study of the issues encountered when writing for standard instruments alone or in combination. The course will focus on writing and arranging for various small and large ensembles to provide practical experience in writing and arranging, and to enhance score-reading abilities. Prerequisite: MUS 205B with a grade of C or better.

MUS331A - Advanced Jazz Improv 331A-1 Advanced Jazz Improvisation. Continuation of topics studied in beginning jazz improvisation, with the addition of more complex harmonies, asymmetrical forms, reharmonization, and modern jazz devices. Prerequisite: MUS 231B with a C or higher.

MUS331B - Advanced Jazz Improv 331B-1 Advanced Jazz Improvisation. Continuation of topics studied in beginning jazz improvisation, with the addition of more complex harmonies, asymmetrical forms, reharmonization, and modern jazz devices. Prerequisite: MUS 331A with a C or higher.

MUS335 - Jazz Styles and Analysis 335-2 Jazz Styles and Analysis. Transcription based analysis focused on the jazz masters. Chord/scale relationships, digital patterns, complex upper structures, target notes, chord substitutions, notation, and in-class performance/lectures will be stressed. Prerequisite: permit required.

MUS340A - Applied Music-Flute 340A-1-3 Applied Music-Flute. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340B - Applied Music-Oboe 340B-1-3 Applied Music-Oboe. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one

of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340C - Applied Music-Clarinet 340C-1-3 Applied Music-Clarinet. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340D - Applied Music-Bassoon 340D-1-3 Applied Music-Bassoon. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340E - Applied Music-Saxophone 340E-1-3 Applied Music-Saxophone. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340F - Applied Music-Horn 340F-1-3 Applied Music-Horn. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340G - Applied Music-Trumpet 340G-1-3 Applied Music-Trumpet. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340H - Applied Music-Trombone 340H-1-3 Applied Music-Trombone. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340I - Applied Music-Euphonium 340I-1-3 Applied Music-Euphonium. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3

credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340J - Applied Music-Tuba 340J-1-3 Applied Music-Tuba. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340K - Applied Music-Percussion 340K-1-3 Applied Music-Percussion. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340L - Applied Music-Violin 340L-1-3 Applied Music-Violin. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340M - Applied Music-Viola 340M-1-3 Applied Music-Viola. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340N - Applied Music-Cello 340N-1-3 Applied Music-Cello. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340O - Applied Music-Double Bass 340O-1-3 Applied Music-Double Bass. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340P - Applied Music-Voice 340P-1-3 Applied Music-Voice. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six

hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340Q - Applied Music-Piano 340Q-1-3 Applied Music-Piano. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340R - Applied Music-Organ 340R-1-3 Applied Music-Organ. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340S - Applied Mus-Harpsichord 340S-1-3 Applied Music-Harpsichord. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340T - Applied Music-Guitar 340T-1-3 Applied Music-Guitar. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340U - Applied Music-Recorder 340U-1-3 Applied Music-Recorder. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340V - Applied Music-Coaching 340V-1-3 Applied Music-Coaching. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS340X - Appl Music-Mus Theater Voice 340X-1-3 Applied Music-Musical Theater Voice. May be repeated for credit as long as passing grade is maintained. Must attend the weekly studio class and be concurrently enrolled in one of the major ensembles. Prerequisite: passed Upper Divisional Exam. Music majors and minors enroll for 1 or 2 credits as designated by their degree requirements, and must take an end of semester jury. Those with prior approval by their applied jury for the specialization in performance enroll for 3 credits. Six hours of individual practice per week required for each lesson. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS341 - Accompanying Laboratory 341-1 to 8 (1 or 2 per semester) Accompanying Laboratory. Experience, under supervision, in accompanying soloists and groups. Counts as a major ensemble for music majors studying at the 340 level or above specializing in keyboard performance and piano pedagogy only. Prerequisite: studying at the MUS 340 level or above or with permission of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS357A - Music History I 357A-3 Music History. (Advanced University Core Curriculum course) [IAI Course: F1 901] Study of musical examples and techniques evolving from the ancient period to the present. May take A or B in either order. Prerequisite: MUS 102 and MUS 105B with a grade of C or better. Restricted to junior standing. Satisfies the College of Liberal Arts Writing Across-the-Curriculum music major requirement. Both A and B satisfy University Core Curriculum Fine Arts requirement in lieu of MUS 103.

MUS357B - Music History II 357B-3 Music History. (Advanced University Core Curriculum course) [IAI Course: F1 901] Study of musical examples and techniques evolving from the ancient period to the present. May take A or B in either order. Prerequisite: MUS 102 and MUS 105B with a grade of C or better. Restricted to junior standing. Satisfies the College of Liberal Arts Writing Across-the-Curriculum music major requirement. Both A and B satisfy University Core Curriculum Fine Arts requirement in lieu of MUS 103.

MUS363A - Pron & Diction Singers Eng/Itl 363A-1 Pronunciation and Diction for Singers-English and Italian. Establishment of proper pronunciation as applied to vocal literature. Prerequisite: one or more semesters of private or class voice instruction.

MUS363B - Pron & Diction Singers-Ger/Fr 363B-1 Pronunciation and Diction for Singers-German and French. Establishment of proper pronunciation as applied to vocal literature. Prerequisite: one or more semesters of private or class voice instruction.

MUS365A - Chamber Music-Vocal 365A-1 to 64 (1 per section) Chamber Music-Vocal. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, piano in combination with other performers, and other instrumental/vocal combinations. Regular weekly rehearsals of appropriate music and public performance as feasible. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles will rehearse weekly. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS365B - Chamber Music-String 365B-1 to 64 (1 per section) Chamber Music-String. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, piano in combination with other performers, and other instrumental/vocal combinations. Regular weekly rehearsals of appropriate music and public performance as feasible. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles will rehearse weekly. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS365C - Chamber Music-Woodwind 365C-1 to 64 (1 per section) Chamber Music-Woodwind. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, piano in combination with other performers, and other instrumental/vocal combinations. Regular weekly rehearsals of appropriate music and public performance as feasible. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles will rehearse weekly. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS365D - Chamber Music-Brass 365D-1 to 64 (1 per section) Chamber Music-Brass. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, piano in combination with other performers, and other instrumental/vocal combinations. Regular weekly rehearsals of appropriate music and public performance as feasible. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles will rehearse weekly. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS365E - Chamber Music-Percussion 365E-1 to 64 (1 per section) Chamber Music-Percussion. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, piano in combination with other performers, and other instrumental/vocal combinations. Regular weekly rehearsals of appropriate music and public performance as feasible. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles will rehearse weekly. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS365F - Chamber Music-Keyboards 365F-1 to 64 (1 per section) Chamber Music-Keyboards. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, piano in combination with other performers, and other instrumental/vocal combinations. Regular weekly rehearsals of appropriate music and public performance as feasible. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles will rehearse weekly. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS365G - Chamber Music-Class Guitar 365G-1 to 64 (1 per section) Chamber Music-Guitar. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, piano in combination with other performers, and other instrumental/vocal combinations. Regular weekly rehearsals of appropriate music and public performance as feasible. Section G counts as a major ensemble for music majors specializing in guitar and for juniors and seniors with non-performance specializations whose principal instrument is the guitar. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles will rehearse weekly. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS365H - Chamber Music-20th Century 365H-1 to 64 (1 per section) Chamber Music-20th Century. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, piano in combination with other performers, and other instrumental/vocal combinations. Regular weekly rehearsals of appropriate music and public performance as feasible. Instrumentalists and singers experiment with new musical techniques and styles. Small ensembles will rehearse weekly. Special approval needed from the instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS366A - Symphonic Band 366A-1 to 8 (1,1,1,1,1,1,1,1) Symphonic Band. Open to all students with experience in bands. Performs standard literature. Two or three concerts per year. Counts as major ensemble, one of which must be taken each semester by resident music majors. Prerequisites: experience in bands and audition prior to first registration. Fee: \$15/credit hour.

MUS366B - Concert Wind Ensemble 366B-1 to 8 (1,1,1,1,1,1,1,1) Concert Wind Ensemble. A select group which performs advanced contemporary literature. Three concerts and tour per year. Counts as major ensemble, one of which must be taken each semester by resident music majors. Not more than eight hours count toward undergraduate degree. Prerequisite: audition prior to first registration. Fee: \$15/credit hour.

MUS366C - Symphony 366C-1 to 8 (1,1,1,1,1,1,1,1) Symphony. Open to all experienced string, woodwind, brass, and percussion players. Plays standard and advanced orchestral literature, performs three or four concerts per year. Counts as a major ensemble, one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration. Fee: \$15/credit hour.

MUS366D - Guitar Ensemble 366D-1 to 8 (1,1,1,1,1,1,1,1) Guitar Ensemble. Emphasizes the study, rehearsal, and performance of works from the Renaissance to the present, including music composed for then classical/jazz guitar and transcriptions. Counts as a major ensemble for guitar majors/minors. Prerequisite: Audition prior to first enrollment. Fee: \$15/credit hour.

MUS366E - Choral Union 366E-1 to 8 (1,1,1,1,1,1,1,1) Choral Union. Open to qualified students who desire to perform major choral-orchestral literature. Two concerts per year. Counts as a major ensemble, one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration. Fee: \$15/credit hour.

MUS366F - Concert Choir 366F-1 to 8 (1,1,1,1,1,1,1,1) Concert Choir. A select group which performs advanced choral literature of all eras. Three or four concerts per year and tours as feasible. Counts as

a major ensemble, one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration. Fee: \$15/credit hour.

MUS366G - Jazz Ensemble 366G-1 to 8 (1,1,1,1,1,1,1,1) Jazz Ensemble. For students experienced with popular literature. Concerts and tours when feasible. Counts as major ensemble for jazz majors in junior and senior year, one of which must be taken each semester by resident music majors. Not more than eight hours count toward undergraduate degree. Prerequisite: audition prior to first registration. Fee: \$15/credit hour.

MUS366H - Civic Orchestra 366H-1 to 8 (1,1,1,1,1,1,1,1) Civic Orchestra. Open to all students who wish to perform major orchestral literature. Prerequisite: audition prior to first registration. Counts as major ensemble for music premajors studying at the 040 level. Fee: \$15/credit hour.

MUS366I - Chamber Choir 366I-1 to 8 (1,1,1,1,1,1,1,1) Chamber Choir. Open to all experienced singers. Emphasis on contemporary literature. Three or four concerts per year and tours as feasible. Does not count as a major ensemble. Prerequisite: audition required. Fee: \$15/credit hour.

MUS366J - Vocal Jazz Ensemble 366J-1 to 8 (1,1,1,1,1,1,1,1) Vocal Jazz Ensemble. Open to all experienced singers. Emphasis on light, popular literature. Two or three appearances per year. Does not count as a major ensemble. Prerequisite: audition prior to first registration. Fee: \$15/credit hour.

MUS373 - Music Business Overview 373-3 Music Business Overview. (Same as RTD 373) A survey of the music business, examining the challenges facing the industry such as piracy, new media, and corporate consolidation. Explore how these issues affect what is produced and broadcast, the impact on the consumer, and emerging legal issues. Careers in the industry will be examined, with discussion of where the industry is headed, and what new business models are being forged. One class trip to Nashville will be included during the course.

MUS374 - Sight Reading for Guitar 374-2 Sight Reading for Guitar. This course is designed to develop the skills necessary for sight reading music on the guitar. Such skills will be applied to reading music written in the following manner: Melodic, polyphonic, homophonic, continuo, figured bass and chord symbols. Prerequisites: MUS 107A and concurrent enrollment in MUS 140-540T.

MUS375 - Intro to Audio Engineering 375-3 Introduction to Audio Engineering. (Same as RTD 375) Introduces basic principles of sound and how audio can be captured and manipulated utilizing current recording technology. The course incorporates concepts of signal flow, microphone selection and placement, signal processing and mixing. The objective is for the student to render a multi-track recording, from concept to completion, employing all the above concepts to demonstrate a solid knowledge of recording fundamentals. Restricted to junior Music major. Lab Fee: \$55.

MUS376 - Adv Audio Engineering 376-3 Advanced Audio Engineering. (Same as RTD 376) This course further develops the skills introduced in RTD 375. Advanced methods will be practiced, including use of signal processing, routing, mixing and mastering. The objective is to have command of a larger format in-line console, and record/mix a multi-track session in Pro Tools, utilizing various microphone techniques, plug-ins, aux sends/returns, patchbay and automation. Prerequisite: MUS 375 or permission of instructor. Lab fee: \$55.

MUS377 - Music Industry: Nashville 377-3 The Entertainment Industry: Nashville. (Same as RTD 374) Examines the multi-dimensional entertainment industry in Nashville, including record labels, television, commercials, video, film, artist management, publishing, PROs, and radio. Five trips to Nashville with presentations from top industry professionals. Visits to recording studios and television networks. Explores career paths and necessary qualifications for success. Restricted to music major.

MUS380 - Composition 380-2 to 4 (2,2) Composition. Original composition in a contemporary language, intermediate in scope and form. Individual instruction and weekly seminar. Prerequisite: MUS 280 or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS398 - Partial Recital 398-1 to 2 (1,1) Partial Recital. Preparation and presentation of a partial recital in any applied field. Recital should contain approximately 25-30 minutes of music. Prerequisite: prior or concurrent registration in MUS 340 and approval of applied jury.

MUS399A - Graduate Music Review 399A-1 to 3 Graduate Music Review-Music History pre-1750. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399B - Graduate Music Review 399B-1 to 3 Graduate Music Review-Music History post-1750. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399C - Graduate Music Review 399C-1 to 3 Graduate Music Review-French Diction. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399D - Graduate Music Review 399D-1 to 3 Graduate Music Review-Italian Diction. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399E - Graduate Music Review 399E-1 to 3 Graduate Music Review-German Diction. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399F - Graduate Music Review 399F-1 to 3 Graduate Music Review-IPA Diction. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399G - Graduate Music Review 399G-1 to 3 Graduate Music Review-Graduate Music Theory. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399H - Graduate Music Review 399H-1 to 3 Graduate Music Review-Analysis and Chromatic Harmony. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399I - Graduate Music Review 399I-1 to 3 Graduate Music Review-Graduate Ear Training. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399J - Graduate Music Review 399J-1 to 3 Graduate Music Review-Fundamental Theory. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS399K - Graduate Music Review 399K-1 to 3 Graduate Music Review-Fundamental Ear Training. Remedial course designed to correct deficiencies as indicated by Graduate Music Screening Exams. Restricted to Graduate Music Major.

MUS400 - Performance Techniques 400-1 to 2 (1,1) Performance Techniques. Individual instruction in any secondary applied field. Designed to provide added depth of preparation for teaching instrumental and vocal music. Restricted to graduate music major. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS401 - Opera Workshop 401-1 to 12 (1 to 2 per semester) Opera Workshop. Open to all appropriately experienced singers, actors, dancers, instrumentalists and theater technicians. Study of opera/opera repertoire and performance techniques. Special approval needed from the instructor.

MUS402 - Musical Theater Workshop 402-1 to 12 (1 to 2 per semester) Musical Theater Workshop. Open to all appropriately experienced actors, singers, dancers, instrumentalists and theater technicians. Study of musical theater/musical revue repertoire and performance techniques. Special approval needed from the instructor.

MUS403 - Lyric Theater Ensemble 403-1 to 16 (1 to 2 per semester) Lyric Theater Ensemble. A select group which performs operatic or musical theater literature, usually in the form of a fully mounted

production each semester. May be repeated for credit. Prerequisite: audition or consent of instructor. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS405 - Music Internship 405-2 Music Internship. The internship is a culminating experience directly related to the student's intended employment or area of interest. Special approval needed from the instructor.

MUS406 - Electronic Composition 406-2 Electronic Composition and Sound Synthesis. Principles of acoustics, parameters of music/sound, basic sound synthesis, wave forms and manipulation of wave forms, digital audio and digital audio platforms, audio recording/engineering, microphone types/use, utilizing sample libraries, mixing, and basic mastering. Restricted to junior standing.

MUS407 - Modal Counterpoint 407-2 Modal Counterpoint. Study of Renaissance contrapuntal techniques. Extensive writing practice, and analysis of stylistic models. Prerequisite: MUS 308 with a C or better.

MUS410A - Piano Pedagogy Practicum 410A-2 Piano Pedagogy Practicum. Provides undergraduate and graduate piano pedagogy majors with the opportunity for supervised practice piano teaching. Course activities include lesson-planning, conducting and evaluating studio piano and class piano lessons, and a survey of important educational issues that impact on effective piano teaching. Special approval needed from the instructor.

MUS410B - Piano Pedagogy Practicum 410B-2 Piano Pedagogy Practicum. Provides undergraduate and graduate piano pedagogy majors with the opportunity for supervised practice piano teaching. Course activities include lesson-planning, conducting and evaluating studio piano and class piano lessons, and a survey of important educational issues that impact on effective piano teaching. Special approval needed from the instructor.

MUS420 - Instrument Repair 420-1 to 2 (1,1) Instrument Repair. A shop-laboratory course dealing with the selection, tuning, adjustment, maintenance, and repair of musical instruments. Prerequisite: two semesters of instrumental techniques courses or consent of instructor.

MUS421 - Advanced Analysis 421-2 Advanced Analysis. Structure, form, and design in music as the coherent organization of all of its factors. Analysis of works chosen from a variety of styles and genres. Prerequisite: MUS 321 with a C or better.

MUS430A - Jazz Arranging I 430A-2 Jazz Arranging I. Step-by-step approach to jazz arranging and techniques from lead sheet construction through full big band arrangements. Students will write and arrange for combos, trombone section and rhythm, saxophone section and rhythm, and full big band with all projects to be played by student ensembles. Special approval needed from the instructor.

MUS430B - Jazz Arranging II 430B-2 Jazz Arranging II. Step-by-step approach to jazz arranging and techniques from lead sheet construction through full big band arrangements. Students will write and arrange for combos, trombone section and rhythm, saxophone section and rhythm, and full big band with all projects to be played by student ensembles. Prerequisite: MUS 430A with a C or higher.

MUS440A - Applied Music-Flute 440A-1 to 3 Applied Music-Flute. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440B - Applied Music-Oboe 440B-1 to 3 Applied Music-Oboe. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not

available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440C - Applied Music-Clarinet 440C-1 to 3 Applied Music-Clarinet. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440D - Applied Music-Bassoon 440D-1 to 3 Applied Music-Bassoon. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440E - Applied Music-Saxophone 440E-1 to 3 Applied Music-Saxophone. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440F - Applied Music-Horn 440F-1 to 3 Applied Music-Horn. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440G - Applied Music-Trumpet 440G-1 to 3 Applied Music-Trumpet. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440H - Applied Music-Trombone 440H-1 to 3 Applied Music-Trombone. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440I - Applied Music-Euphonium 440I-1 to 3 Applied Music-Euphonium. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one

half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440J - Applied Music-Tuba 440J-1 to 3 Applied Music-Tuba. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440K - Applied Music-Percussion 440K-1 to 3 Applied Music-Percussion. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440L - Applied Music-Violin 440L-1 to 3 Applied Music-Violin. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440M - Applied Music-Viola 440M-1 to 3 Applied Music-Viola. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440N - Applied Music-Cello 440N-1 to 3 Applied Music-Cello. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440O - Applied Music-Double Bass 440O-1 to 3 Applied Music-Double Bass. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440P - Applied Music-Voice 440P-1 to 3 Applied Music-Voice. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently

enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440Q - Applied Music-Piano 440Q-1 to 3 Applied Music-Piano. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440R - Applied Music-Organ 440R-1 to 3 Applied Music-Organ. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440S - Applied Mus-Harpsichord 440S-1 to 3 Applied Music-Harpsichord. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440T - Applied Music-Guitar 440T-1 to 3 Applied Music-Guitar. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440U - Applied Music-Recorder 440U-1 to 3 Applied Music-Recorder. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440V - Applied Music-Coaching 440V-1 to 3 Applied Music-Coaching. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440W - Applied Music-Conducting 440W-1 to 3 Applied Music-Conducting. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440X - Appl Music-Mus Theater Voice 440X-1 to 3 Applied Music-Musical Theater Voice. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS440Y - Appl Music-Collaborative Piano 440Y-1 to 3 Applied Music-Collaborative Piano. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: Audition or recommendation of applied jury. Applied music (X) not available to students outside the Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS450 - Topics in Ethnomusicology 450-3 Topics in Ethnomusicology. Courses in this series are designed for advanced undergraduate and graduate students in music and related disciplines to the issues, theories, and interdisciplinary research methodologies of ethnomusicology. Restricted to junior/senior/graduate status.

MUS450A - Women in Music 450A-3 Women in Music. (Same as WGSS 450A) Explores the creative contributions of women in music, examining women's participation across a range of genres, cultural/geographic areas, and time periods. Restricted to junior/senior/graduate music major or consent of instructor.

MUS450B - Music and Social Change 450B-3 Music and Social Change. Examines music as a force in movements for social change as well as music outside of formally identified movements serving this purpose. Seeks out musical sources and cultural meanings, along with connections between music in movements across time, space, culture, and genre. Restricted to junior/senior/graduate music major or consent of instructor.

MUS450C - Ethnomusic Sound Healing 450C-3 Ethnomusicology: Sound Healing. Interdisciplinary exploration of the physical properties, physiological effects, and integrative possibilities of sound/music to empower, transform, and heal mind-body-spirit individually and in community. Restricted to junior/senior/graduate or consent of instructor.

MUS450D - Ethnomusic Healing & Creative 450D-3 Ethnomusicology: Healing and the Creative Process. Explores the healing potential embodied in the process of creating across a range of different contexts & media, drawing on research from interdisciplinary fields. Restricted to junior/senior/graduate or consent of instructor.

MUS452A - Traditions Uppity Women Blues 452A-3 Traditions of Uppity Women's Blues. (Same as AFR 452A and WGSS 452A) Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conventions of gender and sexuality, racism, sexism, classism and homophobia. Restricted to upper level music major. Special approval needed from the department.

MUS452B - Blues/Boogie Woogie Piano Styl 452B-3 Blues and Boogie Woogie Piano Styles. (Same as AFR 452B) Traces the history, culture, and stylistic developments of blues and boogie woogie piano. Explores socio-cultural contexts and examines key players, pieces, and musical styles. Restricted to upper level music major. Special approval needed from the department.

MUS453 - Advanced Topics-Choral Music 453-2 to 4 (2 per semester) Advanced Topics in Choral Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. For experienced teachers and advanced students.

MUS454 - Advanced Topics-Instrumental 454-2 to 4 (2 per semester) Advanced Topics in Instrumental Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students.

MUS455 - Adv Topics-Elem School Music 455-2 to 4 (2 per semester) Advanced Topics in Elementary School Music. Practicum in the selection and use of materials for the elementary school program. Study of techniques for achieving balanced musical growth. For experienced teachers and advanced students.

MUS456A - Music for Exceptional Child I 456A-2 Music for Exceptional Children. Theories and techniques for therapeutic and recreational use of music with physically and mentally handicapped children. Includes keyboard, autoharp, guitar, and tuned and untuned classroom instruments. Take in sequence.

MUS456B - Music for Exceptional Child II 456B-2 Music for Exceptional Children. Applications for the gifted, emotionally disturbed, and culturally disadvantaged child. Take in sequence. Prerequisite: MUS 456A.

MUS457 - Conducting MS/HS Band 457-2 Conducting the Middle/High School Band. This course is designed to further develop the skills learned in Introduction to Conducting and Advanced Conducting. Emphasis will be placed on advanced conducting techniques and score study. Topics will include middle/high school band literature, error detection, rehearsal planning, and teaching techniques. Prerequisites: MUS 316, MUS 317, and/or MUS 318.

MUS458 - Survey of Wind Literature 458-2 Survey of Wind Literature. The study of wind literature from its beginning in the music of Gabrieli through the classical wind serenades of Mozart to the composers of today. The course will include music written for wind chamber groups, as well as music for wind ensemble and the traditional concert band. Restricted to junior/senior/graduate music major or consent of instructor.

MUS461 - Applied Music Pedagogy 461-3 Applied Music Pedagogy. Specialized problems and techniques employed in studio teaching of any particular field of music performance. Study of music literature appropriate for the various levels of performance. Opportunity, as feasible, for supervised instruction of pupils. Meets with appropriate instructor, individually or in groups. Special approval needed from the instructor.

MUS470 - History of Opera 470-3 History of Opera. The development of the music, libretti and staging of opera from the late Renaissance to the present. Prerequisite: MUS 357B, or consent of instructor.

MUS471 - History of Musical Theater 471-3 History of Musical Theater. The development of the music, book, lyrics and staging practices of musical theater from its late 19th Century beginnings to present, with a detailed study of selected contributors and their works. Satisfies the College of Liberal Arts Writing-Across-the-Curriculum music major requirement. Restricted to BFA or MM Opera/Music Theater majors only, or consent of instructor.

MUS472 - Chamber Music Literature 472-3 Chamber Music Literature. A study of literature for the principal types of chamber music groups. Special approval needed from the instructor.

MUS474 - Survey of Jazz History 474-3 Survey of Jazz History. In-depth study of the history of jazz through examination of historical lineage and perspective, recorded output and important stylistic characteristics of each major period. Biographical backgrounds of major composers and performers will be considered as they contribute to the evolution of musical styles. Prerequisite: none.

MUS475 - Baroque Music 475-3 Baroque Music. The development of vocal and instrumental music in the period 1600-1750, from Monteverdi to Bach and Handel. Oratorio and Cantata, the influence of opera, sonata, suite, and concerto. Prerequisite: MUS 357A with a grade of C or better, or graduate standing.

MUS476 - Classical Music 476-3 Classical Music. Development of the sonata, symphony, concerto, and chamber music in the 18th and early 19th centuries, with emphasis on the music of Haydn, Mozart, and Beethoven. Prerequisite: MUS 357B with a grade of C or better, or graduate standing.

MUS477 - Romantic Music 477-3 Romantic Music. Development of the symphony and sonata forms, chamber music, and vocal music in the 19th and early 20th centuries. Rise of nationalism and impressionism. Prerequisite: MUS 357B with a grade of C or better, or graduate standing.

MUS478A - Modern Music I 478A-3 Modern Music I. Examine important works and figures from Western Music in the first half of the 20th Century. Topics included will be Atonality, Serialism, Impressionism, Expressionism, Nationalism, Ballet and Theater Music, Neo-Classicism, Experimentalism, and Jazz. A strong emphasis will be placed on the social and political context in which the music was created. Prerequisite: MUS 357B with a grade of C or better, or graduate standing.

MUS478B - Modern Music II 478B-3 Modern Music II. Examine important works and figures from Western Music in the second half of the 20th Century. Included will be atonality, serialism, avant-garde, minimalism, electronic music, experimental instruments and indeterminacy. Emphasis placed on the social, economic and political context. Students will examine the compositional philosophies and techniques of the era. Prerequisite: MUS 357B with a grade of C or better, or graduate standing.

MUS479A - Solo Performance Lit-Piano 479A-2 to 8 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (A) Piano Literature I, including an introductory study of harpsichord music. Special approval needed from the instructor.

MUS479B - Solo Performance Lit-Organ 479B-2 to 8 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (B) Organ Literature, in relation to the history of the instrument. Special approval needed from the instructor.

MUS479C - Solo Performance Lit-Art Song 479C-2 to 6 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (C) Art Song-topics to rotate over a 3-year sequence; may be repeated for up to 6 credit hours. Special approval needed from the instructor.

MUS479D - Solo Perform Lit-Guitar/Lute 479D-2 to 8 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (D) Guitar and Lute Literature. Special approval needed from the instructor.

MUS479E - Solo Perform-Solo String Lit 479E-2 to 8 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (E) Solo String Literature. Special approval needed from the instructor.

MUS479F - Solo Performance Lit-Solo Wind 479F-2 to 8 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (F) Solo Wind Literature. Special approval needed from the instructor.

MUS479G - Solo Perform-Percussion Lit 479G-2 to 8 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (G) Percussion Literature. Special approval needed from the instructor.

MUS479I - Solo Perform Lit-Piano Lit II 479I-2 to 8 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (I) Piano Literature II. Special approval needed from the instructor.

MUS479J - Solo Perf Lit-Instr Lit Pianst 479J-2 to 8 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (J) Instrumental Sonata Literature for Pianists. Special approval needed from the instructor.

MUS479K - Solo Perf Lit-Piano Cham Music 479K-2 to 8 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and instructors schedules. (K) Piano Chamber Music Literature. Special approval needed from the instructor.

MUS480 - Advanced Composition 480-2 to 4 (2,2) Advanced Composition. Original composition involving the larger media. Individual instruction. Prerequisite: two semesters of MUS 380 with a grade of C or better and approval of composition jury. Undergraduate students limited to 2 credit hours per semester. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS481 - Special Topics Music Theory 481-1 to 4 Special Topics in Music Theory and Composition. An advanced seminar exploring specialized areas in music theory and composition. An emphasis on current trends, composing, score study, and analysis. Prerequisite: MUS 321 and MUS 322 or prior consent of instructor.

MUS482 - Readings Music Hist & Lit 482-1 to 4 Readings in Music History and Literature. Assigned readings and reporting of materials pertaining to a particular phase of history or literature. Approximately three hours preparation per week per credit. Prerequisite: MUS 357A and B, or prior consent of instructor.

MUS483 - Readings in Music Education 483-1 to 4 Readings in Music Education. Assigned readings and reporting of materials pertaining to a particular phase of music education. Approximately three hours preparation per week per credit (adjusted for shorter sessions). Special approval needed from the instructor.

MUS484 - Trends in Music Education 484-3 Trends in Music Education. Evolving issues important to the music educator.

MUS487 - Music Business Senior Project 487-3 Music Business Senior Project. This capstone course offers an opportunity for students to pursue original projects or investigations of music business topics. The details and parameters of each project/investigation are dependent on the students' individual focus area. Each project is planned to occupy typically three hours preparation per week credit hour. Not for graduate credit. Restricted to senior standing. Special approval needed from selected music business instructor.

MUS488 - LA-Music Senior Project 488-2 Liberal Arts-Music Senior Project. This capstone course offers an opportunity for students to pursue original projects or investigations which combine music with their approved Elective Core area. The details and parameters of each project/investigation are established one-on-one with the appropriate School of Music faculty and completed with that instructor's guidance. Project proposals must be submitted and approved to the Chair of the Undergraduate Committee by posted deadlines. Each project will result in a major paper, project, lecture recital or presentation. Not for graduate credit. Restricted to senior standing. Special approval needed from the instructor.

MUS489 - Music Theater Senior Project 489-2 Music Theater Senior Project. Designed as a capstone course for the bachelor of arts in music theater, student will prepare audition materials for a voice, acting and dance jury. Not for graduate credit. Restricted to senior standing. Special approval needed from the instructor.

MUS498 - Recital 498-2 to 3 Recital. Preparation and presentation of a full solo recital in any applied field. Recital should contain approximately 50 minutes of music. Prerequisite: prior or concurrent registration in MUS 440 and approval of applied jury.

MUS499 - Independent Study 499-1 to 8 Independent Study. Original investigation of selected problems in music and music education with faculty guidance. Project planned to occupy approximately three hours preparation per week per credit (adjusted for shorter sessions). Not more than three hours toward 36 required for graduate degree. Special approval needed from the selected instructor.

MUS500 - Independent Investigation 500-1 to 6 Independent Investigation. An opportunity for the graduate student to investigate at an advanced level special interests outside the scope of normal course offerings. The student will select a member of the graduate faculty to guide and evaluate the work. Not more than three hours toward 36 required for graduate degree. Special approval needed from the selected instructor and student's graduate advisor.

MUS501 - Music Bibliography & Research 501-3 Music Bibliography and Research. Bibliographic materials for graduate study in music theory, history, education, and music performance. Practical experience in research techniques and scholarly writing style. Recommended to be taken during the first semester of graduate study. Required of all degree programs.

MUS502A - Analytic Techniques A 502A-2 Analytic Techniques A. Study of the analytic techniques of Heinrich Schenker through analysis of representative works from the common practice period. Prerequisite: MUS 321 and/or consent of instructor. Restricted to graduate standing in music.

MUS502B - Analytic Techniques B 502B-2 Analytic Techniques B. Study of post-tonal music theories-including Allen Forte's pitch-class set theory and twelve-tone theory-through analysis of representative 20th and 21st century works. Prerequisite: MUS 322 and/or consent of instructor. Restricted to graduate standing in music.

MUS503 - Sci Eval & Res in Music 503-3 Scientific Evaluation and Research in Music. Quantified research concepts and vocabulary; measurement theory and techniques for evaluating and testing musical aptitude and achievement; investigation of acoustical perception; survey of current scientific research in music. A research project is required.

MUS509 - Hist & Phil of Music Educ 509-3 History and Philosophy of Music Education. The evolution of school music and its changing relationship to the individual, to society, and to the school curriculum.

MUS510A - Sem-Piano Pedagogy Tech 510A-3 Piano Pedagogy Seminar-Piano Technique. Provides an in-depth study of the three classic texts on the subject of piano technique and prepares students to deal with important aspects of piano technique in piano teaching.

MUS510B - Sem-Piano Pedagogy Lit 510B-3 Piano Pedagogy Seminars-Piano Literature. An extensive survey of baroque, classical, romantic and contemporary piano literature designed specifically to meet the needs of those pursuing professional careers as piano teachers.

MUS510C - Sem-Piano Pedagogy Analysis 510C-3 Piano Pedagogy Seminars-Piano Music Analysis. Details the analytic and problem-solving techniques of piano performance study that are fundamental for teaching piano students of all ages and abilities.

MUS535 - Contemporary Idioms 535-2 Contemporary Idioms. An analysis of major compositional techniques since 1945. Prerequisite: MUS 502B or consent of instructor.

MUS540A - Applied Music-Flute 540A-1-3 Applied Music-Flute. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540B - Applied Music-Oboe 540B-1-3 Applied Music-Oboe. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540C - Applied Music-Clarinet 540C-1-3 Applied Music-Clarinet. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540D - Applied Music-Bassoon 540D-1-3 Applied Music-Bassoon. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per

week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540E - Applied Music-Saxophone 540E-1-3 Applied Music-Saxophone. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540F - Applied Music-Horn 540F-1-3 Applied Music-Horn. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540G - Applied Music-Trumpet 540G-1-3 Applied Music-Trumpet. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Student enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540H - Applied Music-Trombone 540H-1-3 Applied Music-Trombone. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540I - Applied Music-Euphonium 540I-1-3 Applied Music-Euphonium. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540J - Applied Music-Tuba 540J-1-3 Applied Music-Tuba. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540K - Applied Music-Percussion 540K-1-3 Applied Music-Percussion. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540L - Applied Music-Violin 540L-1-3 Applied Music-Violin. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540M - Applied Music-Viola 540M-1-3 Applied Music-Viola. May be repeated for credit as long as passing grade is maintained. Students must perform and end of semester jury and be concurrently

enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540N - Applied Music-Cello 540N-1-3 Applied Music-Cello. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540O - Applied Music-Double Bass 540O-1-3 Applied Music-Double Bass. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540P - Applied Music-Voice 540P-1-3 Applied Music-Voice. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540Q - Applied Music-Piano 540Q-1-3 Applied Music-Piano. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540R - Applied Music-Organ 540R-1-3 Applied Music-Organ. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540S - Applied Music-Harpsichord 540S-1-3 Applied Music-Harpsichord. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540T - Applied Music-Guitar 540T-1-3 Applied Music-Guitar. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540U - Applied Music-Recorder 540U-1-3 Applied Music-Recorder. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540V - Applied Music-Coaching 540V-1-3 Applied Music-Coaching. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540W - Applied Music-Conducting 540W-1-3 Applied Music-Conducting. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540X - Appl Music-Mus Theater Voice 540X-1 to 3 Applied Music-Musical Theater Voice. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in an appropriate ensemble as determined by their declared concentration/emphasis curricular guide and appropriate degree requirement checklist. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Prerequisite: audition or recommendation of applied jury. Not available outside Music Theater degree. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS540Y - Appl Music-Collaborative Piano 540Y-1-3 Applied Music-Collaborative Piano. May be repeated for credit as long as passing grade is maintained. Students must perform an end of semester jury and be concurrently enrolled in one of the major ensembles. Prerequisite: audition or recommendation of applied jury. Students enrolled in 1 or 2 credits take one half-hour lesson per week; 3 credits take one hour lesson per week. Students enrolled in 2 or 3 credits must attend the weekly studio class. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS545 - Pedagogy of Music Theory 545-2 Pedagogy of Music Theory. An orientation to the philosophy of theory with application to teaching techniques. Special approval needed from the instructor.

MUS550 - School Mus Admin & Supervsn 550-2 School Music Administration and Supervision. Study of the objectives and processes of music instruction. Administration roles in developing the means and ends of music instruction, and techniques employed for the improvement of instruction.

MUS556 - Advanced Conducting 556-2 to 4 (2,2) Advanced Conducting. Individual or group study with appropriate instructor of choral, orchestral, or band literature. Practice in score reading, baton technique and interpretation. Opportunity to rehearse and conduct ensembles when feasible. Prerequisite: completion of an undergraduate conducting course. Restricted to graduate standing in music, or consent of instructor.

MUS565A - Chamber Music-Vocal 565A-1 to 4 (1 per topic) Chamber Music-Vocal. Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS565B - Chamber Music-String 565B-1 to 4 (1 per topic) Chamber Music-String. Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS565C - Chamber Music-Woodwind 565C-1 to 4 (1 per topic) Chamber Music-Woodwind. Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS565D - Chamber Music-Brass 565D-1 to 4 (1 per topic) Chamber Music-Brass. Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS565E - Chamber Music-Percussion 565E-1 to 4 (1 per topic) Chamber Music-Percussion. Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS565F - Chamber Music-Keyboard 565F-1 to 4 (1 per topic) Chamber Music-Keyboard. Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS565G - Chamber Music-Guitar 565G-1 to 4 (1 per topic) Chamber Music-Guitar. Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS565H - Chamber Music-Contemporary 565H-1 to 4 (1 per topic) Chamber Music-Contemporary. Groups of 2 to 16 performers as organized and sponsored by individual faculty members. Includes duo-piano teams and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Each subject may be repeated up to 2 hours. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566A - Ensemble-Marching Salukis 566A-1 Ensemble-Marching Salukis. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566B - Ensemble-Symphonic Band 566B-1 Ensemble-Symphonic Band. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566C - Ensemble-Concert Wind 566C-1 Ensemble-Concert Wind Ensemble. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566D - Ensemble - Symphony 566D-1 Ensemble-Symphony. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566E - Ensemble-Choral Union 566E-1 Ensemble-Choral Union. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566F - Ensemble-Concert Choir 566F-1 Ensemble-Concert Choir. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566G - Ensemble-Chamber Singers 566G-1 Ensemble-Chamber Singers. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566H - Ensemble - Guitar 566H-1 Ensemble-Guitar Ensemble. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566I - Ensemble-Opera Workshop 566I-1 Ensemble-Opera Workshop. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Repair/Replacement Fee: \$15/credit hour.

MUS566J - Ensemble-Jazz 566J-1 Ensemble-Jazz Ensemble. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566K - Ensemble-Accomp Lab 566K-1 to 12 (1 or 2 per semester) Ensemble-Accompanying Lab. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS566L - Ensemble-Chamber Music-Piano 566L-1 to 12 Ensemble-Chamber Music-Piano. One credit per group: maximum of two credits for concurrent participation in two groups. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS573 - Medieval Music 573-3 Medieval Music. Music of the medieval world; Gregorian chant; the Tropes; secular songs of the troubadours and trouveres; the rise of polyphony; Ars Antiqua; organum and conductus; Ars Nova; Dunstable and English descant up to about 1450; types of notation. Non-music majors: special approval needed from the instructor.

MUS574 - Renaissance Music 574-3 Renaissance Music. Burgundian and Netherlands music from 1450 and its spread; Isaac and Josquin; 16th Century polyphony in France, Germany, Spain, and England; the rise of music for instruments and for solo voices. Non-music majors: special approval needed from the instructor.

MUS580 - Graduate Composition 580-3 Graduate Composition. Composition in the larger forms for solo and ensemble performance. Prerequisite: Approval of composition jury. Technology and Instrument Repair/Replacement Fee: \$15/credit hour.

MUS595 - Research Paper 595-1 Research Paper. A written report presenting the history and style of works performed in the graduate recital, MUS 598 or 498, or other topic relating to the student's principal performing area or independent study project. Prerequisite: MUS 501 and approval of topic by the student's Graduate Faculty Committee.

MUS598 - Graduate Recital 598-3 Graduate Recital. Preparation and presentation of a full solo recital in any applied field. The recital program should contain approximately 60 minutes of music. Prerequisite: completion of at least three credits in 540 in the appropriate field and approval of instructor. The Recital Jury certifies the acceptability of the recital program and the student's preparedness 2-3 weeks prior to the scheduled public recital. The Recital Jury submits the public recital grade to the Director of Graduate Studies.

MUS598A - Recital, CP Vocal 598A-1 to 3 (1 to 2 per semester) Graduate Recital, CP Vocal. Preparation and presentation of a full recital with a vocalist. Restricted to Collaborative Piano majors only. Approval of performance jury. The performance jury certifies the acceptability of the completed recital and the grade to the graduate committee.

MUS598B - Recital, CP Instrumental 598B-1 to 3 (1 to 2 per semester) Graduate Recital, CP Instrumental. Preparation and presentation of a full recital with an instrumentalist. Restricted to Collaborative Piano majors only. Approval of performance jury. The performance jury certifies the acceptability of the completed recital and the grade to the graduate committee.

MUS599 - Thesis 599-2 to 6 Thesis. An intensive written study in the history, theory, teaching or philosophy of music; or the manuscript and parts (with tape recording when feasible) of a substantial musical composition or series of compositions accompanied by an analytical or explanatory document. Graded S/U or DEF. Prerequisite: MUS 501 and prior approval of topic or proposal by thesis director and graduate committee in music.

MUS601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of

dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Music Faculty

Allison, Robert, Associate Professor, Emeritus, D.M.A., University of Illinois, 1988.
Barta, Michael, Professor, M.M., Franz Liszt Academy of Music (Hungary), 1977.
Beattie, Donald, Associate Professor, Emeritus, M.Mus., University of Colorado, 1977.
Benyas, Edward, Professor, M.M., Northwestern University, 1994.
Best, Richard, Professor, Emeritus, Northwestern University.
Bottje, Will Gay, Professor, Emeritus, D.M.A., Eastman School of Music, 1955.
Breznikar, Joseph, Professor, Emeritus, M.Mus., University of Akron, 1977.
Brown, Philip, Professor, Emeritus, M.M.E., University of North Texas, 1983.
Carter, Clarence, Assistant Professor, Emeritus, M.Mus., Southern Illinois University Carbondale, 1973.
Coloton, Diane, Senior Lecturer, Emerita, D.M., Indiana University, 2006.
Davenport, Susan, Associate Professor, D.M.A., Texas Tech University, 2001.
Delphin, Wilfred, Professor, Emeritus, D.M.A., University of Southern Mississippi, 1976.
Dillard, David, Associate Professor, D.M.A., University of Michigan, 2004.
Fink, Timothy, Professor, M.F.A., Southern Illinois University Carbondale, 1993.
Fligel, Charles, Associate Professor, Emeritus, M.M., University of Kentucky, 1966.
Ginther, Kathleen, Senior Lecturer, Emerita, D.M.A., Northwestern University, 1996.
Hanes, Michael, Professor, Emeritus, M.M.E., Southern Illinois University, 1965.
Hussey, George, Professor, Emeritus, M.A.Ed., Washington University, 1963.
Johnson, Maria, Associate Professor, Ph.D., University of California, 1992.
Kato, Yuko, Associate Professor, D.M.A., Manhattan School of Music, 2007.
Kelley, Richard, Associate Professor, D.M.A., University of Illinois Urbana-Champaign, 2012.
Lausell, Isaac, Assistant Professor, Ph.D., State University of New York at Stony Brook, 2012.
Lee, Junghwa, Associate Professor, D.M.A., Eastman School of Music, 1999.
Lenz, Eric, Associate Professor and Interim Director, D.M.A., University of Alabama, 2002.
Lord, Suzanne, Associate Professor, Emerita, D.M.A., Louisiana State University, 1996.
Mandat, Eric P., Professor, Emeritus, D.M.A., Eastman School of Music, 1986.
Mellado, Daniel, Associate Professor, Emeritus, Ph.D., Michigan State University, 1979.
Mochnick, John, Professor, Emeritus, D.M.A., University of Cincinnati, 1978.
Morehouse, Christopher, Associate Professor, D.M.A., University of Cincinnati, 2005.
Poulos, Helen, Associate Professor, Emerita, D.M., Indiana University, 1971.
Presar, Jennifer, Senior Lecturer, M.M., West Virginia University, 2000.
Reifinger, James, Assistant Professor, Ph.D., Indiana University, 2009.
Simmons, Margaret, Professor, Emerita, M.M., University of Illinois, 1976.
Stemper, Frank, Professor, Emeritus, Ph.D., University of California, 1981.
Underwood, Jervis, Professor, Emeritus, Ph.D., North Texas State University, 1970.
Wagner, Jeanine, Professor, Emerita, D.M.A., University of Illinois, 1987.
Walczak, Christopher, Assistant Professor, D.M.A., Rice University, 2013.
Weiss, Robert L., Jr., Professor, Emeritus, Ph.D., Southern Illinois University, 1984.
Werner, Kent, Associate Professor, Emeritus, Ph.D., University of Iowa, 1966.
Worthen, Douglas, Associate Professor, D.M.A., Hartt School of Music, University of Hartford, 2007.

Paralegal Studies

SIU Paralegal Studies is an American Bar Association approved program leading to the Bachelor of Science degree. A paralegal is qualified by specialized education, training, and experience to assist an attorney in non-clerical, substantive legal work. Paralegals – also known as legal assistants – may research law and facts, interview witnesses and clients, compose pleadings and correspondence, draft and file court documents, and prepare for and assist with trial. Paralegals work under the supervision and direction of an attorney and may not provide legal services or advice directly to the public except as

permitted by law. Most paralegals work as vital members of legal teams in small and large law firms and medical or government offices; in legal departments of corporations, insurance agencies, and banking or financial institutions; and, in local, county, state, and federal administrative agencies. Many students major in Paralegal Studies as a preferred path to Law school.

The program's goals and objectives reflect the Core Competencies for Paralegal Programs as stated by the American Association for Paralegal Education. Core competencies include essential knowledge of substantive and procedural law as well as evidence of practical legal skills developed from programmatic research, writing, and oral communication. Together these competencies demonstrate outstanding organizational, interpersonal, critical thinking, and analytical thinking skills. Also, program faculty and staff model and teach students to exemplify professionalism and the high ethical standards of the legal profession.

The program's curriculum and degree requirements build on general education requirements in the University Core Curriculum and in the College of Liberal Arts. Students majoring in Paralegal Studies must complete 34 credit hours of core legal specialty courses. These courses are PARL 300A, PARL 300B, PARL 305, PARL 310, PARL 320, PARL 330, PARL 350, PARL 360, PARL 370, PARL 380, and PARL 405. At least 15 credit hours of these legal specialty courses must be completed at SIU Carbondale. Additionally, PARL 300A, PARL 300B, and PARL 310 require a grade of C or higher to satisfy program major requirements. For students who desire to begin their program of study with a basic paralegal skills course, PARL 295 is recommended but not required.

In addition to the 34 credit hours of core legal specialty course requirements, the major requires at least 12 credit hours of elective courses. There are two options for completing this requirement: the general option and the pre-law specialization option. The general option is an excellent choice for students planning to be employed in a law-related occupation upon graduation. The pre-law specialization is an excellent path for students planning to pursue law school after graduation. To fulfill the general option, students must choose and complete at least 12 credit hours of office support/management-related courses from a select list provided by the program. To earn the pre-law specialization, students must choose and complete 12 credit hours of 300-400 level Liberal Arts courses; at least one 3-credit hour course of which must be selected from a list of law-related courses provided by the program.

As a capstone experience, majors are required to complete PARL 405, a 4-credit hour course with an internship component that provides on-the-job training, and a classroom component that assists students with career planning. The complete program encourages the spirit of inquiry; embraces a range of social sciences, humanities, and communication skills that give students a grasp of the social and ethical contexts of the legal profession, and develops confidence and a strong grasp of legal ethics.

Bachelor of Science Degree in Paralegal Studies, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	18
<p>These requirements include 6 credit hours of foreign language and 6 credit hours of international coursework. Any or all of these 12 credit hours may be satisfied by choosing particular courses during completion of the University Core Curriculum. These requirements further include 6 credit hours of Writing-Across-the-Curriculum courses, and these 6 credits are fulfilled by completing PARL 300A and PARL 300B.</p>	
Requirements for Major in Paralegal Studies	46

Degree Requirements	Credit Hours
Core Legal Specialty Courses: PARL 300A, PARL 300B, PARL 305, PARL 310, PARL 320, PARL 330, PARL 350, PARL 360, PARL 370, PARL 380, and PARL 405	34
Four office support/management-related electives chosen from a program list	12
Electives	17
Total	120

Bachelor of Science Degree in Paralegal Studies with a Specialization in Pre-Law, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	18
These requirements include 6 credit hours of foreign language and 6 credit hours of international coursework. Any or all of these 12 credit hours may be satisfied by choosing particular courses during completion of the University Core Curriculum. These requirements further include 6 credit hours of Writing-Across-the-Curriculum courses, and these 6 credits are fulfilled by completing PARL 300A and PARL 300B.	
Requirements for Major in Paralegal Studies	46
Core Legal Specialty Courses: PARL 300A, PARL 300B, PARL 305, PARL 310, PARL 320, PARL 330, PARL 350, PARL 360, PARL 370, PARL 380, and PARL 405	34
Four 300/400-level Liberal Arts courses, at least one of which must be chosen from a program list of law-related courses	12
Electives	17
Total	120

Paralegal Studies Minor

A minor in Paralegal Studies requires 15 credit hours at SIU Carbondale, from among any core Paralegal Studies legal specialty courses except PARL 405. The paralegal minor is not approved by the American Bar Association and is not intended to prepare a student for a career as a paralegal.

Paralegal Studies Courses

PARL295 - Basic Paralegal Skills 295-3 Basic Paralegal Skills. This course focuses on essential skills for successful paralegals. The style of grammar, punctuation, sentence structure, and analytical progression in legal writing is emphasized. Course assignments expand students' reading comprehension, legal vocabulary, and proofreading and editing skills. Other skills practice includes using office machines, improving typing speed, and taking instruction and direction. The course prepares students to render a common core of legal knowledge into practical law office practice.

PARL300A - Research and Writing I 300A-3 Legal Analysis, Research, and Writing I. After examining the litigation process and structure of the federal and state court systems, students are introduced to a wide variety of legal research techniques and sources. Students will learn how to perform legal research using books within the law library and will learn computer-assisted legal research. Students will learn how to use and write proper legal citations, as students begin a process of analytical legal writing. Students will analyze legal-related articles, prepare case briefs, and multiple case analyses. Professional responsibilities will be stressed throughout the course. This course meets the CoLA Writing-Across-the-Curriculum requirement. Restricted to PARL majors and minors or special approval needed from the department.

PARL300B - Research and Writing II 300B-3 Legal Analysis, Research, and Writing II. Students will continue to develop their analytical skills and will learn how to conduct effective legal writing using policy arguments; identifying fallacious arguments; and systematically using IRAC, CRAC, IREAC, and CREAC. Students will use computer-assisted legal research techniques to find and validate cases, statutory annotation, and secondary sources. Students will prepare legal correspondence, case briefs, motions, memoranda of law, and trial briefs. Proper legal citation and professional responsibilities will be stressed throughout the course. This course meets the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: A grade of C or better in PARL 300A. Restricted to PARL majors and minors or special approval needed from the department.

PARL305 - Introduction to Law 305-3 Introduction to Law. This course will provide a basic background of the United States legal process. It will provide an introduction to civil and criminal processes, legal terminology, a history of common law, and cover various areas of substantive law. Ethics, regulations, and professional responsibilities involved in the legal profession will be discussed, along with basic legal concepts and legal analysis. Students will be required to read and brief cases, and to analyze factual situations involving civil and criminal law, and legal ethics.

PARL310 - Civil Procedure 310-3 Civil Procedure. Students will examine the roles of lawyers and paralegals in handling civil cases, and the means by which the objectives of litigation may be achieved. Strategies and mechanics of civil procedure will be explored in depth, and students will be required to prepare a complaint, discovery requests, and initial appellate documents. PARL 310 requires a grade of C or higher to satisfy program major requirements.

PARL315 - Intro to Criminal Law 315-3 Introduction to Criminal Law. (Same as CCJ 310) An examination of the general principles that apply to all criminal offenses and the specific elements of particular crimes that prosecutors must prove beyond a reasonable doubt. Topics include actus reus, mens rea, concurrence, causation, and harmful result; the defenses of justification and excuse; the doctrines of complicity and inchoate (unfinished) crimes; and the elements of major crimes against persons, property, habitation, public order and morals, and the state.

PARL320 - Wills, Trusts, & Estates 320-3 Wills, Trusts, and Estates. Students will study the more common forms of wills and trusts and the fundamental principles of law applicable to each. The course will analyze administration of estates under the Illinois Probate Act. Students will be required to prepare a will, trust, power of attorney, and an estate project.

PARL325 - Contracts 325-3 Contracts. This course will introduce students to basic principles of contract law, including required elements for a valid and enforceable contract. The various remedies for breach of contract will be analyzed and applied to contractual obligations. Students will develop skills required to

interpret contractual language and draft contractual clauses. A variety of simple contracts will be drafted during the semester.

PARL330 - Business Entities 330-3 Business Entities. Includes a review of the lawyer's role in the formation of business entities, including sole proprietorships, partnerships, and corporations, with a survey of the fundamental principles of law applicable to each and the preparation of documents necessary to the organization and operation of each. The student will be prepared to draft articles of incorporation and other legal documents relevant to the role of a paralegal in a modern law office.

PARL335 - Property 335-3 Property. This course will introduce students to basic principles of Property Law and assist them in developing skills for drafting documents for the purchase, sale, and transfer of real estate; understanding a variety of types of estates in real property and rights associated with real property; and other real estate-related matters.

PARL340 - Internship in Paralegal Studies 340-1 to 6 Internship in Paralegal Studies. This course involves supervised on-the-job training and experience in public or private offices typically employing paralegals. Students must work 50 hours per credit hour. A typical internship placement requires 150 hours for 3 credit hours. Only 3 credit hours of internship credit may be applied toward major requirements. Prerequisite: PARL 300A and 300B with minimum grade of C. Restricted to PARL majors and minors or special approval from the department.

PARL345 - Labor and Employment Law 345-3 Labor and Employment Law. This course will introduce students to the basic principles of Labor and Employment Law and deals with the definition of employer and employees and the nature of the employment relationship, and the course deals with the laws relating to employment in the union setting and employment discrimination.

PARL350 - Family Law 350-3 Family Law. This course is a review of the law as it relates to the various aspects of domestic relations including marriage, divorce and separation, alimony, child custody and support, taxes, and illegitimacy and adoption. Students will be required to draft a petition for dissolution of marriage, marital settlement agreement, judgment for dissolution of marriage, and to prepare a child support calculation.

PARL355 - Criminal Law & Procedure 355-3 Criminal Law and Procedure. This course covers causes of action of criminal liability on the misdemeanor and felony level. Some constitutional law issues raised by a criminal practice will also be addressed. Students will study the procedures of the criminal system from arrest through post-trial motions, sentencing, and appeal. Students will be required to draft a criminal complaint and motions commonly used in the practice of criminal law. Students will also engage in an interviewing exercise.

PARL360 - Torts 360-3 Torts. This course will provide an introduction to the broad area of civil wrongs and their appropriate remedies. Traditional areas of tort law principles will be discussed including intentional torts, negligence, absolute liability, product liability, nuisance and commonly employed defenses. Mock interviews of a client and a witness will be conducted. Students will prepare a complaint, request for production of documents, and other commonly used documents in the law of personal injury litigation.

PARL365 - Professional Responsibility 365-3 Ethics and Professional Responsibility. This course is an in-depth review of the canons of professional responsibility, conduct, and ethics concerning the legal profession, including case study projects. The emphasis is on the duty of paralegals and lawyers to act so as to serve a client's best interests, to do so in an ethical manner, and to advance the interests of justice.

PARL370 - Bankruptcy 370-3 Bankruptcy and Creditors' Rights. This course will provide an introduction to bankruptcy and the debtor-creditor relationship. The main purpose of this course is to give a basic understanding of the laws that apply to debtors and creditors, as a foundation to unraveling the intricacies of the bankruptcy process. Students will prepare a Chapter 7 Bankruptcy and Schedules, and a Chapter 13 Plan.

PARL375 - International Law 375-3 International Law. Meets a need for increased global awareness in education, business, and society. The study of International Law looks at systems of values common to diverse societies, with a focus on treaties and laws regulating the relationships and trade between the United States and foreign nations and agreements between countries and their effects on American

society. Topics may include, but not be limited to, human rights, group rights, and treatment of aliens. Romano-Germanic civil law and Anglo-American common law will be presented, as will cross-border disputes. The course will also address laws and policies governing the European Union and its business practices. Students will be introduced to sources of international law and where to begin research, depending on what is at issue; litigation and arbitration for civil and criminal proceedings, including the extradition process; various parties who could become involved in an international dispute, including military, diplomats, and businesses; and develop practical skills for applying international law to businesses of varied sizes and diverse backgrounds.

PARL380 - Law Office Technology 380-3 Technology in the Law Office. This course will introduce the paralegal student to various law office technology, including case management programs, database development, and billing software. Restricted to PARL majors and minors or special approval from the department.

PARL385 - Evidence 385-3 Court Procedures and Evidence. This course is designed to acquaint the student with the kinds of evidence and the rules governing the admissibility of evidence in court, including the effect of court decisions on the acquisition and admissibility of evidence. Students will be required to complete several writing assignments.

PARL390 - Law Office Management 390-3 Law Office Management. This course is designed to acquaint the student with a variety of law office management issues including financial, human resources, records, information, facilities, and marketing.

PARL400 - Advanced Paralegalism 400-3 Advanced Paralegalism. A course that shall review the many areas that will assist a student in a paralegal career, including; interviewing and investigation in the law office, use of computer in the office, office administration, lawyer and paralegal ethics, job opportunities, professionalism. Not for graduate credit. Restricted to senior standing. Special approval needed from the instructor. Lab fee: \$20.

PARL405 - Advanced Internship 405-4 to 7 Advanced Internship. This course has both an internship component and a class component. The class component (1 credit hour) assists students with career planning, interview techniques, and job performance skills. The internship component provides supervised on-the-job training experience in public or private offices. Interns must complete 150 hours for 3 hours of credit. An extra credit hour--up to a maximum of 6--may be earned for each additional 50 hours. Only 4 credit hours of internship credit may be applied toward major requirements. Prerequisite: PARL 300A and PARL 300B with a minimum grade of C. Restricted to PARL majors and minors or special approval of the department.

Paralegal Studies Faculty

Benson, Matthew, J.D., Lecturer, Southern Illinois University School of Law, 2004.

Daly, Patrick, J.D., Lecturer, Southern Illinois University School of Law, 1993; LLM from The John Marshall Law School, 1999.

Hughes, Kenneth, J.D., Senior Lecturer, Southern Illinois University School of Law, 1982.

Koprucki, Patricia Jane, J.D., Lecturer, University of Cincinnati College of Law, 1981; M.S. in Education, Southern Illinois University Carbondale, 1975.

Silver, Daniel, J.D., Senior Lecturer and Interim Director, Southern Illinois University School of Law, 1993.

Ting, Timothy, Lecturer, J.D., Distinguished Teacher, Lecturer, Southern Illinois University School of Law, 2008.

Turk, Gene A., Jr., J.D., Lecturer, The Yale Law School, 1983.

Public Health

Public Health offers a community health education specialization within the health education major. Public Health is appropriate for those students planning to conduct health education and health promotion activities in non-classroom settings.

An overall 2.5 grade point average and completion of PH 101: Foundations of Human Health are required for admission in the undergraduate health program. Additional prerequisites include completion of the University Core English composition course(s) and AH 241 or equivalent anatomy/physiology course.

Psychomotor and verbal skills are required for students enrolled in PH 334 and PH 434. If questions arise concerning a student's ability in these areas, an assessment will be made prior to the end of the first week of the semester to determine whether the student possesses the necessary skills to remain in the course. The first aid coordinator in the Department of Public Health and Recreation Professions will make the final decision.

A student in the Public Health major must have a 2.75 grade point average in the major before clearance to do an internship. A grade of C or better is required for all major courses in the undergraduate Public Health program.

Bachelor of Science Degree in Public Health, College of Education and Human Services

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
PH 101 must be included in University Core Curriculum.	
Requirements for Major in Public Health	54
PH 300, PH 312, PH 325, PH 326, PH 330, PH 334, PH 355, PH 401, PH 407, PH 410, PH 413S, PH 488, PH 490A,B, PH 493, QUAN 402	
AH 241 or appropriate anatomy and/or physiology course	3-4
Public Health or other Electives	21-22
Total	120

Public Health Courses

PH101 - Foundations-Human Health 101-2 Foundations of Human Health. (University Core Curriculum)
This course is designed to examine contemporary health-related issues for all dimensions of the individual - physical, mental, social, emotional and spiritual - through focus on health promotion and disease prevention. Emphasis is placed on maintaining or improving quality of life by developing personal and social skills (decision-making, communication, stress management, goal setting) across health education content areas, as well as identifying and accessing appropriate health-related resources.

PH200 - Human Ecology 200-3 Human Ecology. This course will explore a range of personal, social, economic, and environmental factors influencing health status and quality of life. Health determinants include biology, genetics, individual behavior, access to health services, and the physical/social

environment. Interactive discussion will be integrated with laboratory experiences applying the scientific method to the study of health promotion and disease prevention.

PH300 - Health Ed Foundation/Theory 300-3 Health Education: Foundations, Theory, and Practice. Provides a foundation to the health education profession. Includes an overview of historical, philosophical, theoretical, and research foundations; professional ethical issues; professional roles and responsibilities; and future directions. Enrollment limited to public health majors or those seeking health education endorsement.

PH311 - Human Growth & Development 311-3 Human Growth and Development. An overview of human development from conception through senescence. Designed for professional personnel who will be concerned with planning health programs for groups representing broad age ranges. Emphasis will be on physical, mental, and social dimensions of growth and development.

PH312 - Emotional Health 312-3 Emotional Health. Introduces knowledge and skills needed to acquire and maintain emotional health. A variety of individual and community issues that occur across the lifespan in our diverse, complex world will be examined.

PH325 - Plan/Implement Health Ed Progs 325-3 Planning and Implementing Health Education Programs. Current theories and models related to planning and implementation of health education programs in various settings will be examined. Steps to program planning, including needs assessment, recruitment, developing program plans and implementation strategies will be discussed.

PH326 - Evaluation in Health Education 326-3 Evaluation in Health Education. This course covers the principles and methods for monitoring the implementation of health education and for assessing its impact. It also focuses on the development and selection of valid and reliable measures and the use of standardized scores and other appropriate statistics. Applications are completed in classroom and community settings.

PH330 - Consumer Health 330-3 Consumer Health. An overview of the health marketplace and the processes involved in becoming an intelligent consumer of health information, products, and services. Topics will include health-related advertising, fads, fraud, legislation, watchdogs, healthcare options, self-care, complementary and alternative medicine, drugs, devices, major health problems, nutrition, and physical activity.

PH334 - First Aid and CPR 334-3 First Aid and CPR. Provides students with first aid and cardiopulmonary resuscitation knowledge and skill competencies necessary to care for injuries and provide assistance in emergencies. A nationally recognized First Aid and CPR certification may be obtained with successful completion of the course. Purchase of first aid kits and protective equipment are necessary. Students will be required to pay a lab fee of \$15.

PH335 - Construction Safety/Health 335-3 Construction Safety and Health. The course will introduce the student to principles of safety and health in the construction industry. The course will include identification of safety and health hazards, risk reduction measures, personal protection, and safety attitudes and training. Includes a study of the Safety and Health Regulations for Construction.

PH345 - Emergency Plan/Response 345-3 Emergency Planning and Response. This course focuses on key elements of emergency response plans, with particular emphasis given to holistic planning in both industrial and municipal settings, the relevance of hazard and risk assessment techniques to emergency response operations, personnel training, and multi-level coordination in both planning and operational phases of emergency response.

PH346 - Motorcycle Instr Training 346-4 Motorcycle Rider Education Instructor Training. Provides prospective teachers with on-cycle teaching experience with beginner riders. Addresses program administration, scheduling, public information techniques, equipment procurement, evaluation and instructional technology. Certification as Motorcycle Rider Course Instructor can be obtained. Materials purchased from the Motorcycle Safety Foundation are required in this course. Special approval needed from the instructor.

PH351 - Health Ed in Early Childhood 351-3 Health Education in Early Childhood. A study of essential factors of health, nutrition, and safety as they apply to school environments of children birth to age eight.

Emphasis will be given to nutritional needs, health routines, health appraisals, safety, hygiene, childhood illness, and social-emotional needs. Students will examine the relationship of the child, family, school, and community on the child's health and well-being.

PH355 - Intro: Community Health 355-3 Introduction to Community Health. Organization and administration in local, state, and national official and non-official health agencies, their purposes and functions, and an overview of methods for meeting community health needs and for solving community health problems.

PH401 - Epidemiology 401-3 Epidemiology. This course will review principles and practices related to the cause, prevention, and control of disease and injury in the human population. Emphasis will be placed on understanding the distribution of diseases, epidemiology methods, risk assessment, and the application of epidemiology data to disease prevention and control.

PH402 - Death Education 402-3 Death Education. (Same as GRON 402) Designed to prepare educators to conduct learning experiences about death and dying in a variety of school, college, medical care, and community settings. Stress will be placed on developing brief, functional curricula and usable, imaginative, teaching-learning materials and on evaluating resource materials for use in educating at various levels of maturity.

PH403 - Health Advocate Training 403-3 Health Advocate Training. Provides students with knowledge and skills in the areas of peer health education, health advocacy, and referral. Instruction includes health care information from a wellness point of view. Prepares students for practicum in health advocate program. Credit will not count toward a master's degree in health education. Special approval needed from the instructor.

PH407 - Substance Use Prevention 407-3 Substance Use Prevention. Designed to prepare educators to plan, implement and evaluate substance use prevention programs. Emphasizes incidence/prevalence, etiology, risk factors, short- and long-term effects of substance use. Key elements of effective prevention programs are reviewed. Meets requirements of Illinois state law concerning drug education.

PH410 - Human Sexuality 410-3 Human Sexuality. (Same as WGSS 411) Provides detailed information on dimensions of sexuality; characteristics of healthy sexuality; anatomy and physiology; gender roles; relationships; sexually transmitted infections/diseases; contraceptive issues and concerns; sexual victimizations; and sexuality through the life cycle.

PH411 - EMT in the Wilderness 411-6 Emergency Medical Technician in the Wilderness. Placement of trained emergency medical technicians into a wilderness situation and having them adopt previously learned skills and newly developed skills. Prerequisite: PH 334 or PH 434.

PH412S - Driving Task Analysis 412S-3 Driving Task Analysis: An Introduction. An introductory course that deals with the highway transportation system, traffic problems, the driving task, perception and implementation of the driver education classroom program. Observation of a teaching environment is included. A valid driver's license is required.

PH413S - Injury Prevention & Safety 413S-3 Injury Prevention and Safety. Introduces the concepts and topics of injury prevention and safety. Course areas include: school, farm, consumer, fire, home, traffic, occupational, recreational, and disaster.

PH414 - Sexuality Education 414-3 Sexuality Education. Focuses on knowledge/skills needed to address complex issues of sexuality education. Discussion will include challenges/resources for all health education settings and related disciplines. Purposes/goals, the nature of sexuality education teachers/learners, and "best practice" will be covered. Emphasis on developing competencies essential for professional practice.

PH415 - Health Counseling 415-3 Health Counseling. This course teaches basic communication skills and intervention strategies for helping people make positive health related lifestyle changes. It is not a course in therapeutic counseling; it focuses on helping average people to function in the healthiest way possible.

PH420 - Special Topics 420-1 to 3 Special Topics/Independent Study. An area of study to be determined by students in consultation with health education faculty that goes beyond the current health

education course offerings. 1 to 3 credits; may be repeated twice for maximum of 6 hours. Special approval needed from the instructor.

PH430 - Hlth/Injry Cntrl: Work Setting 430-3 Health and Injury Control in a Work Setting. (Same as IMAE 430) Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness, and injury control that are effective. Field trips to work sites are included.

PH434 - Adv First Aid & Emerg Care 434-4 Advanced First Aid and Emergency Care. Meets the needs of those in positions where advanced first aid and emergency care is required. A nationally recognized First Aid and CPR "First Responder" certification may be obtained with successful completion of the course. Purchase of first aid kits and protective equipment are necessary. Prerequisite: PH 334 or consent of instructor. Students will be required to pay a laboratory fee of \$20.

PH435 - Worksite Safe/Hlth Eval 435-2 Work Site Safety and Health Evaluation. This course covers methods of inspecting and evaluating health and safety hazards at a work site including analysis of specific job assignments. It also introduces the student to injury and incident investigation techniques. The course will include hands-on work site evaluation.

PH440 - Health Issues in Aging 440-3 Health Issues in Aging. (Same as GRON 440) Course content includes demographic trends; physiological changes associated with aging; health care and consumer challenges; cultural differences; psychological effects of aging; housing; long-term care; retirement; care giving; and formal, informal, and community-based support systems.

PH441 - Women's Health 441-3 Women's Health. The course deals with a wide variety of health concerns of American women as consumers in the current health marketplace. Major categories of topics include health products, health services, and sources of health information of particular interest to women. Emphasis is also placed on current health related issues of women. The major purpose of the course is to provide a basis for informed decision-making by the female consumer.

PH442S - Dev Vehicle Oper Skills 442S-3 Developing Vehicle Operational Skills: Driver Education Laboratory Experiences. Learning activities will focus on preparing the prospective driver educator to conduct activities that develop operational skills for a novice driver. Emphasis is placed on laboratory organization and administration, maintaining a learning environment, developing laboratory instructional modules, and conducting learning experiences. Prerequisite: PH 412S.

PH443S - Driver Ed Classroom 443S-3 Developing Classroom Skills: Driver Education Classroom Experience. Learning activities will focus on preparing the prospective driver educator with the skills to teach in the driver education classroom with application to classroom organization, maintaining a safe learning environment, developing instructional modules, and conducting learning experiences. Prerequisite: PH 412S with a grade of C.

PH445 - Adv Driver Ed Instructor Trn 445-3 Advanced Driver Education Instructor Training. Prepares prospective instructors of advanced driving techniques. Emphasis is placed upon safe driving practices, vehicle dynamics, emergency vehicle operation, in-car response to simulated driving emergencies, and instructional techniques. Special approval needed from the instructor.

PH450 - Health Programs in Elem School 450-3 Health Programs in Elementary Schools. This course is designed to present key health-related concepts and skills to enable elementary teachers to deliver culturally-sensitive, developmentally-appropriate, standards-based instruction to elementary students. It will also provide an overview of coordinated school health programs and their relationship to academic achievement.

PH461 - Health Education Workshop 461-1 to 12 Health Education Workshop. A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers.

PH470S - Highway Safety:Alcohol/Drugs 470S-3 Highway Safety as Related to Alcohol and Other Drugs. Relationship between alcohol and other drugs and traffic accident causes. A review of education

programs designed to minimize drug related accidents. Restricted to advanced standing or consent of instructor.

PH471 - PH Instructional Strategies 471-2 Public Health Instructional Strategies. This course is designed for graduate students who are teaching assistants in Public Health. The purpose of the course is to enhance professional skills of those who are responsible for teaching health education, general education, and first aid.

PH476 - Stress Management 476-3 Stress Management. A study of the physiological, emotional and sociological stressors and their underlying mechanisms in states of disease and health. Particular emphasis is placed upon prevention and control of stress via self assessment techniques and proficiency in self control techniques such as biofeedback, autogenic training, meditation and progressive muscle relaxation.

PH480S - Traffic & Driver Ed Prog Dev 480S-3 Traffic and Driver Education Program Development. Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: PH 443S or consent of instructor.

PH484 - Preventing Violence Ed Setting 484-3 Preventing Violence in Educational Settings. Designed to prepare educators, administrators, and other professionals to plan, implement, and evaluate violence prevention, conflict resolution, and crisis intervention programs in educational settings. Incidence/prevalence, etiology, and risk/protective factors related to youth violence will be examined. Current theories and models related to program planning and implementation will be applied to design coordinated, integrated school/community programs. Based on current research, key elements of effective curricula and other program components will be reviewed.

PH485 - Global Health 485-3 Global Health. This course will present introductory principles and practices related to public health on a global basis. In this course we will analyze various public health aspects of global health, including: public health problems (chronic disease, infectious disease, injury, disability, malnutrition, etc.) affecting foreign countries, prevention and control efforts in foreign countries, United States involvement in global health problems, economic and social impact of global health problems, structure and function of health care systems, and the future of global health.

PH488 - Environmental Health 488-3 Environmental Health. This introductory course is designed primarily for health education students and is intended to provide a broad overview of key areas of environmental health as a public health discipline. This course contributes to students' understanding of the impact of environmental concerns in their role as public health educators.

PH489 - Intro to Biostatistics 489-3 Introduction to Biostatistics. An introduction to biostatistics; examination of theories of population projections; collection, organization, interpretation, summarization, and evaluation of data relative to public health happenings with emphasis on graphic presentation.

PH490A - Field Experience 490A-2 to 12 Field Experiences in Schools, Community Health. Field observation, participation, and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: all required health education courses. Special approval needed from the instructor.

PH490B - Adv Fieldwork Sch Com IP 490B-2 to 6 Advanced Field Experience in School, Community Health or Injury Prevention Education. Advanced field observation, participation and evaluation of current school or community health education or injury prevention programs in agencies relevant to student interests. Prerequisite: grade of B or better in PH 490A. Special approval needed from the instructor.

PH491 - Health Teaching/Learning 491-3 Health Teaching/Learning: School and Community. Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education.

PH493 - Health Informatics 493-3 Health Informatics. The application of technology to engage communities and individuals in behavioral and environmental change processes. The course will focus on the use of technology to describe the magnitude of health problems and their sources; analyze risk factors; identify community strengths from which strategies may be defined and tools created to intervene,

prevent problems, and promote health and well-being; and continuously evaluate, refine, and implement what works.

PH496 - Industrial Hygiene 496-4 Industrial Hygiene. Provides a background in the recognition, evaluation, and control of toxic materials and hazardous physical agents in the work environment. Special approval needed from the instructor.

PH499 - Rx: Ed in Health Care Settings 499-3 Rx: Education in Health Care Settings. Designed for members and potential members of the health care team to explore educational concepts and strategies applicable to a variety of health care settings. Includes rights and responsibilities of consumer and professional, determinants of health behavior, contrasting models of health care, communication skills, media and materials and planning, implementing and evaluating educational programs. Open to medical and dental personnel, nurses, health educators, dietitians, therapists, pharmacists, social workers, and related professionals.

PH500 - Community Organizing 500-3 Community Organizing. This course addresses the process of engaging communities in health education and behavior change programs. Various organizing paradigms for fostering healthy communities are examined, and their practical and ethical implications are considered. Skills development for community assessment, constituency-building, and leadership of participatory planning efforts is emphasized.

PH505 - Intro to Public Health 505-3 Introduction to Public Health. This course provides an overview of the interdisciplinary field of public health. History and ongoing evolution of public health services and delivery systems in the U.S., essentials of public health practice, and federal, state, and local public health functions are considered. Emerging health problems, changing population dynamics, and global health context will be examined.

PH512 - Public Health Program Planning 512-3 Public Health Program Planning. This course will present theories/models for health promotion program planning and implementation in community/public health settings. Steps to program planning, including: logic models, needs assessment, community organizing, evaluation/assessment, and social marketing will be addressed.

PH515 - Contemp Issues in Health 515-3 Contemporary Issues in Health-Related Fields. This course is designed to expand the conceptual framework for health education research, practice, and professional development by examining contemporary issues in health and related fields. It includes reading, analyzing, interacting, and reflecting about selected critical issues and future concerns as they relate to the health education profession as well as individual, community, and societal health-related needs.

PH520 - Special Topics 520-6 Special Topics/Independent Study. An area of study to be determined by students in consultation with the health education faculty that goes beyond the current health education course offerings. 1-3 credits; may be repeated twice for maximum of 6 hours. Special approval needed from the instructor.

PH525 - Health Behavior & PH 525-3 Health Behavior and Health Education. Examines health-related motivation and behavior through the study of relevant psychological, sociological, and educational theory and research. Emphasis is on application of behavioral and behavior-change theories and constructs in designing effective health education and promotion programs.

PH526 - Resrch Eval Approaches PH 526-3 Research and Evaluative Approaches to Public Health. Introduction to research and evaluation. Includes survey and analyses of health testing and research/evaluation procedures, uses and limitations of knowledge and attitude tests, behavioral inventories, checklists, questionnaires, interviews, and other techniques.

PH530S - Research: Traffic Safety 530S-3 Research in Traffic Safety. A study of unique problems related to traffic safety and a review and evaluation of contemporary studies. Restricted to graduate standing or consent of instructor.

PH532 - Public Health Admin 532-3 Public Health Administration: Principles and Practices. This course is designed to provide a broad overview of key administrative issues in public health, including building and sustaining a public health workforce, disease control and prevention, emergency preparedness, legal

issues, and financial considerations. Attention will be given to the application of management concepts and principles related to public health organizations at the national, state, and local levels.

PH533A - Foundations of PH I 533A-4 Foundations of Public Health I. Historical and philosophical foundations of public health dealing with principles of the discipline and preparation for services as a professional. Consideration of theoretical models of health and public health, professional ethical issues and future directions.

PH533B - Foundations of PH II 533B-4 Foundations of Public Health II. This course will provide a broad overview of quantitative research in public health, including research designs, research questions, assumptions, limitations, data collection methods, sampling, instrument development, and data analysis and interpretation. Discussion of health-related theories/models and ethical considerations will be integrated throughout the course. Prerequisite: PH 533A or consent of instructor.

PH536 - Professional Preparation in PH 536-3 Professional Preparation in Public Health. Considers national, state and local factors influencing professional preparation, accreditation and certification processes. Emphasis upon influences of official and non-official agencies. Historical perspective, the present status, and future directions of the profession.

PH541 - Issues in Health Care 541-3 Issues in Health Care. Examination of current and continuing issues in the provision, administration, financing, and regulation of health care services. Prerequisite: PH 583 with grade of C or better or consent of instructor.

PH550S - Current Dev:Traffic/Safety Ed 550S-3 Current Developments in Traffic and Safety Education. Current problems, trends and research studies in traffic and safety education are reviewed, critiqued and evaluated. Restricted to graduate standing or consent of instructor.

PH555S - Traffic Safety Management 555S-3 Traffic Safety Management. Course deals with highway safety legislation and other acts related to traffic safety. Application of safety management techniques, procedures and structure of federal and state agencies are emphasized. Special approval needed from the instructor.

PH561 - Adv Public Health Workshop 561-1 to 12 Advanced Public Health Workshop. A different focal theme each year; e.g., technology and health education; coordinated school health programs; social marketing; mental health. Information, ideas and concepts are translated into teaching/learning materials and approaches; continuing opportunity for interaction between prospective and experienced health educators.

PH571 - Prof Dev for Teaching Assts 571-3 Professional Development for Teaching Assistants. This course is designed to assist graduate teaching assistants to develop and improve skills necessary for performing their responsibilities. Emphasis will be placed on teaching/learning processes; classroom strategies and skill development; responding to diverse student populations; communication across the curriculum; teaching outside the classroom; identifying campus and community resources, support services, media, and technologies; evaluation and assessment. Restricted to graduate teaching assistants. Special approval needed from the instructor.

PH583 - U.S. Health System 583-3 U.S. Health System: Organization, Delivery, and Policy. This course examines dynamics and trends in organization, financing, and delivery of health care in the United States. Specific current health policy issues and the political, social, and economic forces that affect them are analyzed. Practical implications for public health professionals will be considered.

PH585 - Global Health Issues 585-3 Global Health Issues. This course is designed to introduce students to current health concerns in economically developing nations by examining socioeconomic, cultural, and political issues impacting health. Basic epidemiologic principles will be used to study disease and adverse health conditions in developing countries as well as understand and critique possible intervention strategies. Implications for health educators working in international settings will be discussed.

PH588 - Issues in Environmental Health 588-3 Current Issues in Environmental Health. This course will address core principles and concepts of environmental health disciplines, analyze environmental factors impacting human and ecological health, and explore environmental health tools through their application to current issues of concern to government agencies.

PH590 - Practicum in Comm Health 590-6 to 9 Practicum in Community Health. Students complete 300 to 450 hours in an approved community health agency. Working with preceptors, students design and put into practice an individual project with goals and objectives emphasizing one or more core competencies (i.e., assessment, planning, implementation, and evaluation). Prerequisite for MPH students: Completion of all coursework. Restricted to public health majors. Special approval needed from the instructor.

PH592 - Practicum:Safety/Indstrl Hlth 592-8 Practicum in Safety and Industrial Health. Students are assigned full-time to a safety agency or industry for experience in either safety or industrial health. Restricted to those specializing in safety industrial health. Special approval needed from the instructor.

PH593 - Epidemiology 593-3 Epidemiology. This course will present principles and practices related to the study, prevention and control of health-related conditions in the human population. Emphasis will be placed on understanding the principal concepts of epidemiology, including aspects of disease distribution, epidemiologic methods, risk assessment of disease and injury, descriptive and analytic epidemiologic methods and study designs, and application of epidemiologic data to the prevention and control of disease and injury. Format for the class will include lecture and small group seminars.

PH597 - Seminar in PH 597-2 Seminar in Public Health. Advanced graduate students discuss individual health projects and present research problems. Each will present a dissertation prospectus. The course will cross two semesters. The first semester will require class attendance. The second will require attending dissertation prospectus and defense meetings and writing individual reports. Prerequisite: PH 533B.

PH598 - Grant Writing 598-3 Grant Writing in Public Health. Consideration is given to funding sources, proposal guidelines, procedures for support, budgetary requirements and evaluation procedures. Students examine different types of funded projects, develop a research proposal and analyze the art of grantsmanship and political action.

PH599 - Thesis 599-1 to 6 Thesis.

PH600 - Dissertation 600-1 to 32 (1 to 16 per semester) Dissertation.

PH601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

PH699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Public Health Faculty

Birch, David A., Professor, Emeritus, Ph.D., Pennsylvania State University, 1990.

Diehr, Aaron, Assistant Professor, Ph.D., University of Toledo, 2015.

Drolet, Judy C., Professor, Emerita, Ph.D., University of Oregon, 1982.

Fetro, Joyce V., Professor and Distinguished Teacher, Emerita, Ph.D., Southern Illinois University, 1987.

Kittleston, Mark J., Professor, Emeritus, Ph.D., University of Akron, 1986.

Lacey, Ella P., Associate Professor, Emerita, Ph.D., Southern Illinois University, 1979.

Middleton, Wendi, Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2015.

Miller, Kim H., Associate Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 2000.

Ogletree, Roberta J., Professor, Emerita, H.S.D., Indiana University, 1991.

Rice, Brian, Clinical Instructor, M.S., Southern Illinois University, 1996.

Ritzel, Dale O., Professor, Emeritus, Ph.D., Southern Illinois University, 1970.

Vitello, Elaine, Professor, Emerita, Southern Illinois University Carbondale, 1977.

Welshimer, Kathleen J., Associate Professor, Emerita, Ph.D., University of North Carolina, 1990.

Wilken, Peggy A., Clinical Assistant Professor, Emerita, Ph.D., Southern Illinois University, 1995.

Philosophy

Philosophy is a critical, speculative, and reflective discipline concerned with the exploration of ideas. The questions with which it deals can be found in every human pursuit and subject matter. Among the subjects it embraces are the nature of truth and reality, the possibility of knowledge, the quest for moral values and political justice, and the nature of mind, language, art, and reason. The field of logic is a formal study of the art of exact thinking. Given this breadth, philosophy can be related to almost any subject or profession.

Recent studies have shown that strong liberal arts majors are in much demand in the world outside the University. While preprofessionals may enter the job market with higher salaries, those with liberal arts majors tend to rise higher in their professions. This is because a liberal arts degree indicates a capacity for thinking, learning, writing, and breadth of understanding. Philosophy is a strong liberal arts major, and majors in philosophy rank in the highest percentages for GRE, LSAT, and GMAT scores. In addition to academic work, philosophy contributes toward careers in law, medicine, business, government, journalism, religion, computers, and education.

The Department of Philosophy at SIU is a pluralistic department, representing a variety of traditions, such as analytic philosophy, phenomenology, American philosophy, Asian philosophy, and feminism. It has faculty who specialize in the history of philosophy, logic, ethics, metaphysics, political and legal philosophy, the philosophy of science, the philosophy of technology and the philosophy of religion, among others.

The student electing to major in philosophy should consult the department's director of undergraduate studies. Majors may request to take a graduate level seminar (for undergraduate credit) as a substitute for three credit hours at the 400-level. Philosophy majors will satisfy the College of Liberal Arts Writing-Across-the-Curriculum requirement by passing PHIL 304 and PHIL 305A or PHIL 305B. A minor is not required for a major in philosophy, though it is recommended that the student take foreign languages such as Greek, Latin, French or German.

Bachelor of Arts Degree in Philosophy, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	14
Requirements for Major in Philosophy	33
Logic requirement: PHIL 105 or PHIL 320	3
Ethics requirement: PHIL 104 or PHIL 340	3
History of Philosophy requirement: PHIL 304 and PHIL 305A, PHIL 305B	6
Six hours from 300 level courses in addition to PHIL 304 and PHIL 305A or PHIL 305B	6
At least nine hours of 400-level courses	9
Electives for major in Philosophy	6
Electives	32

Degree Requirements	Credit Hours
Total	120

Bachelor of Arts Degree in Philosophy, Pre-Law Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	41
College of Liberal Arts Academic Requirements	14
Requirements for Major in Philosophy-Pre-Law specialization	33
PHIL 104; PHIL 105; PHIL 309I; PHIL 310; PHIL 340 PHIL 445; PHIL 499	3
History of Philosophy requirement: PHIL 304 and PHIL 305A, PHIL 305B	6
At least six hours of 400-level courses	6
Electives	32
Total	120

Philosophy Minor

A minor in philosophy requires 15 hours, a maximum of six of which may be selected from philosophy courses offered in the University Core Curriculum and below the 300-level, six of which must be selected from the courses listed above for the major. PHIL 304 and PHIL 305A or PHIL 305B are recommended.

Philosophy Courses

PHIL102 - Intro to Philosophy 102-3 Introduction to Philosophy. (University Core Curriculum) [IAI Course: H4 900] Introduction to fundamental philosophical issues across a broad spectrum. Problems in metaphysics, epistemology and ethics will be among the areas explored. Emphasis throughout is upon developing in the student an appreciation of the nature of philosophical questioning, analyzing and evaluating arguments and reflecting on the nature of human existence.

PHIL103A - World Humanities I 103A-3 World Humanities. (University Core Curriculum) [IAI Course: HF 904N] This course will explore the rise, development and interaction of the major world civilizations as embodied in ideas and their expressions in religion, philosophy, literature and art. The great traditions of Near Eastern, European, Central Asian, Indian, Chinese and Japanese cultures will be examined. (A) The first semester will cover the early civilization of the Near East, the classical world of Greece and Rome, early China and India.

PHIL103B - World Humanities II 103B-3 World Humanities. (University Core Curriculum) [IAI Course: H9 900] This course will explore the rise, development and interaction of the major world civilizations as embodied in ideas and their expressions in religion, philosophy, literature and art. The great traditions of

Near Eastern, European, Central Asian, Indian, Chinese and Japanese cultures will be examined. (B) The second semester will look at the integrative civilizations of Buddhism, Medieval Christianity and Islam, and Modern Europe.

PHIL104 - Ethics 104-3 Ethics. (University Core Curriculum) [IAI Course: H4 904] Introduction to contemporary and perennial problems of personal and social morality, and to methods proposed for their resolution by great thinkers past and present.

PHIL105 - Elementary Logic 105-3 Elementary Logic. (University Core Curriculum) [IAI Course: H4 906] Study of the traditional and modern methods for evaluating arguments. Applications of logical analysis to practical, scientific and legal reasoning, and to the use of computers.

PHIL106 - Philosophy of Self-Cultivation 106-3 Philosophy of Self-Cultivation. An introduction to the history of the relation between mind and body. It focuses on how the relation of mind and body can help bring about well being or the good life. The course incorporates a physical activity component: walking, jogging, table tennis, for example.

PHIL210 - The American Mind 210-3 The American Mind. (University Core Curriculum) [IAI Course: HF 906D] This course will survey the diverse traditions, ideas and ideals that have shaped American culture in the past and today. Major works from Native American, African American, feminist, Puritan, Quaker and American Zen Buddhist writers may be used as well as those from such intellectual movements as the Enlightenment, Transcendentalism and Pragmatism.

PHIL211 - Philosophy & Diversity 211-3 Philosophy and Diversity: Gender, Race and Class. (University Core Curriculum) This course is a philosophical introduction to diverse perspectives within modern American culture. It will address through reading and discussion important contemporary moral and social issues from the perspective of nontraditional orientations including African American, Native American and American feminism. The resources of philosophy and other related disciplines such as psychology, sociology and literature will be used to develop a culturally enriched perspective on important contemporary issues.

PHIL300 - Metaphysics 300-3 Metaphysics. Metaphysics deals with the broadest and most fundamental concepts: What does it mean to exist? It encompasses questions about whether what fundamentally exists is one or many. Is reality essentially physical or does it include something nonphysical? What is "causality"? Is there an ultimate or highest reality, that which some call God? If God exists, can there be anything that is not God? Can we know what reality truly is or is the human mind fated to behold only the world as it appears to us? Can we at least know ourselves? Is human existence basically similar to the existence of any "thing" or does our sense of history and mortality make us experience Being in a different way? This course will engage these and other questions through readings selected from the Western tradition, from the ancient Greeks to the modern age. Readings from Asian traditions may also be included.

PHIL301 - Philosophy of Religion 301-3 Philosophy of Religion. An analysis of problems in the psychology, metaphysics, and social effects of religion. Among topics discussed are the nature of mystical experience, the existence of God, and problems of suffering, prayer, and immortality.

PHIL303I - Philosophy and the Arts 303I-3 Philosophy and the Arts. (University Core Curriculum) [IAI Course: H9 900] An interdisciplinary examination of (1) literary and other artistic works which raise philosophic issues and (2) philosophic writings on the relationship between philosophy and literature. Possible topics include: source of and contemporary challenges to the traditional Western idea that literature cannot be or contribute to philosophy; the role of emotion, imagination and aesthetic value in philosophic reasoning; the role of literature in moral philosophy; and philosophic issues of interpretation.

PHIL304 - Ancient Philosophy 304-3 Ancient Philosophy. (Advanced University Core Curriculum course) (Same as CLAS 304) The birth of Western philosophy in the Greek world, examining such Pre-Socratics as Anaximander, Heraclitus, Pythagoras, and Parmenides; focusing upon the flowering of the Athenian period with Socrates, Plato, and Aristotle. The course will conclude with a discussion of the Hellenistic systems of Stoicism, Epicureanism, and the Neo-Platonic mysticism of Plotinus of the Roman period. Fulfills CoLA Writing-Across-the-Curriculum requirement. Satisfies University Core Curriculum Humanities requirement in lieu of 102.

PHIL305A - Modern Philosophy 305A-3 Modern Philosophy-Metaphysics and Epistemology. (Advanced University Core Curriculum course) A survey course covering the major figures and themes in the development of modern philosophy up to Kant. Concentration on the Rationalist and Empiricist traditions and the simultaneous development of modern science. Either 305A or 305B fulfills the CoLA Writing-Across-the-Curriculum requirement. 305A or B satisfies the University Core Curriculum Humanities requirement in lieu of 102.

PHIL305B - Modern Philosophy 305B-3 Modern Philosophy-Moral and Political Philosophy. (Advanced University Core Curriculum course) A survey course covering the major figures and themes in the development of modern philosophy up to Kant. Concentration on the Rationalist and Empiricist traditions and the simultaneous development of modern science. Either 305A or 305B fulfills the CoLA Writing-Across-the-Curriculum requirement. 305A or B satisfies the University Core Curriculum Humanities requirement in lieu of 102.

PHIL306 - 19th Century Philosophy 306-3 Nineteenth Century Philosophy. Survey of 19th century European philosophy, focusing on the development of idealism and romanticism. Readings include selections from Fichte, Schelling, Hegel, and others.

PHIL307I - Phil:Science/Nature/Technology 307I-3 Philosophy of Science, Nature and Technology. (University Core Curriculum) Interdisciplinary study of major humanistic critiques of technology, science and nature; analysis of topics such as ecology, the information revolution, aesthetics and ethics in various branches of science and technology, relation of science to technology.

PHIL308I - Asian Religions 308I-3 Asian Religions: A Philosophical Approach. (University Core Curriculum) [IAI Course: H4 903N] This course examines three major areas of Asian religious traditions from a philosophical perspective: South Asia, East Asia, and Buddhist traditions. Since it is not possible to be all inclusive, concentration will be on those with continuing significant spiritual, philosophical, social, political, aesthetic and literary influence. More specifically, it is an introduction to some of the major Asian religious traditions, such as Hinduism, Buddhism, Confucianism, Taoism, and Zen Buddhism, approached through philosophical reflection. Emphasis is on classical traditions, since this provides a solid foundation upon which students are then able to pursue further independent readings in more recent developments. Furthermore, this emphasis permits an extended exploration of the interaction among contemporary economic, sociological and religious developments and classical traditions.

PHIL309I - Peace, Law & Justice 309I-3 Philosophy of Peace, Law, and Justice. (University Core Curriculum) An interdisciplinary exploration of classical and modern theories of peace, law, and justice with special attention to their implications for important contemporary political issues.

PHIL310 - Advanced Critical Thinking 310-3 Advanced Critical Thinking. A course designed to improve students' critical reading, thinking and writing skills and to help students planning to attend law school prepare for the LSAT exam. Uses LSAT guides on Logical Reasoning and Logic games as texts.

PHIL314 - Love, Sex, Gender & Philosophy 314-3 Love, Sex, Gender, and Philosophy. (Same as WGSS 314) A survey of philosophical approaches to love, sex, and gender. A philosophical inquiry into the representation of love, sex, and gender, including materials that combine text, words, and images. The course studies an ancient philosophy text on love, a classical text of twentieth-century feminist philosophy, and critiques of feminism that draw on the life of gender, sexuality, and race. It questions the nature and possibilities of love.

PHIL320 - Deductive Logic 320-3 Deductive Logic. An introduction to first order logic, including the Boolean connectives, conditionals, and identity. The emphasis is on the concept of logical consequence and the related concepts of tautological and analytic (semantic) consequence. Other topics include truth functional and non-truth functional connectives, truth-tables, informal proofs, proofs of non-consequence, derivations using a Fitch natural deduction system, and translations to and from English.

PHIL334 - Ethics-Media/Culture/Society 334-3 Ethics in Media, Culture and Society. (University Core Curriculum) (Same as JRNL 334) The purpose of this course is to discuss what it means to act ethically. Does it mean anything more than doing what is right? Are ethics for a lawyer different from a journalist or priest or doctor? How does society decide what is ethical behavior and what is not?

PHIL340 - Ethical Theories 340-3 Ethical Theories. (Advanced University Core Curriculum course) [IAI Course: H4 904] Nature of ethics and morality, ethical skepticism, emotivism, ethical relativism, and representative universalistic ethics. Bentham, Mill, Aristotle, Kant, Blanshard, and Brightman. Satisfies University Core Curriculum Humanities requirement in lieu of 104.

PHIL344 - Biomedical Ethics 344-3 Biomedical Ethics. Changes in biology and medicine have brought into sharp focus such problems as allocation of scarce medical resources, use of human subjects in experiments, abortion, euthanasia, genetic screening, truth-telling in medical practice, moral rights of patients and other matters. This course brings ethical principles to bear on these issues.

PHIL360 - Latin American Philosophy 360-3 Latin American Philosophy. The course deals with philosophy in Latin America from the 19th century to the present. Central themes of the course include: identity theory, philosophy and culture, and political philosophy.

PHIL371 - Intro to Contemp Phenomenology 371-3 Introduction to Contemporary Phenomenology. Introductory survey of individual thinkers and questions in the contemporary phenomenological tradition: Husserl, Sartre, Merleau-Ponty, Levinas, and Ricoeur.

PHIL375 - Ecology and Ethics 375-3 Ecology and Ethics. An exploration of several views of the relationship between human beings and the natural world. This course will examine the changing paradigms of environmental studies for insights about our epistemological and moral approaches to nature. Both classical and contemporary literature on nature will be used. Such topics as the Gaia hypothesis, ecofeminism, deep ecology, and the use of nature for human purposes will be addressed.

PHIL385 - Mystical Literature 385-3 Mystical Literature and Meditation. This course will introduce and explore the profound tradition of literature that has nourished religious, ethical, as well as philosophical and literary, developments in Western and Eastern cultures, but has often been overlooked, not only by the sciences, but also by the humanities: the tradition of mystical literature. In addition to reading primary sources representative of Western and Eastern mystical traditions, this course will include a weekly lab during which the student will be exposed to meditative techniques and actual meditative practices. Finally, this course will integrate guest speakers/practitioners, audio and visual supports pertaining to the course, and work on the Web, allowing students to broaden their connections to others who also share an interest in this field of study and practice. Prerequisite: at least one course (three hours) in the humanities on the 100 or 200 level.

PHIL389 - Existential Philosophy 389-3 Existential Philosophy. Surveys the two main sources of existentialism, the philosophies of Kierkegaard and Nietzsche, with occasional reference to thinkers such as Sartre, Heidegger, Buber, Marcel, and others.

PHIL399 - First Freedoms 399-3 First Freedoms. (University Core Curriculum) (Same as JRNL 399) The First Amendment protects citizens from the government and sets boundaries of democratic self-government. The course encompasses free expression in all media-social, broadcast and cinema. It explores tensions between law and ethics, press freedom and privacy, intellectual freedom and equality and liberty and security.

PHIL400 - Philosophy of Mind 400-3 Philosophy of Mind. An investigation of the philosophic issues raised by several competing theories of mind, focusing on the fundamental debate between reductionistic accounts (e.g., central state materialism, identity theories of the physical and mental) and views which reject such proposed reductions. Traditional and contemporary theories will be examined. Designed for students in the life and social sciences with little or no background in philosophy as well as philosophy students.

PHIL405 - Democratic Theory 405-3 Democratic Theory. (Same as POLS 405) An examination of various aspects of democratic thought, including the liberal tradition and its impact upon the United States. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Prerequisite: POLS 114 or consent of instructor.

PHIL415 - Logic of Social Sciences 415-3 Logic of Social Sciences. (Same as SOC 415) An examination of the theoretical structure and nature of the social sciences and their epistemological

foundations. The relationship of social theory to social criticism; theory and praxis. Historical experience and social objectivity. Social theory as practical knowledge.

PHIL420 - Symbolic Logic 420-3 Symbolic Logic. An introduction to first order logic with an emphasis on quantification. Topics include the semantics of the quantifiers, first-order validity, quantifier equivalences, functions, informal proofs, proofs of non-consequence, derivations using a Fitch natural deduction system, translations to and from English, soundness and completeness, the axiomatic method, first order set theory, and mathematical induction. Prerequisite: PHIL 320 or consent of the instructor.

PHIL433 - Post-Colonialism 433-3 Post-Colonialism Philosophy. This course focuses on African, Caribbean, and Latin American philosophers who have and continue to contribute to the development of post-colonial philosophy. In this class we will examine how post-colonial thinkers challenge and rework some of the main areas of philosophy, such as epistemology, political philosophy, ethics, philosophy of language, etc., by decentering the colonial assumptions that underpin these areas and their development. This class explores what this decentering means, not only for postcolonial theory, but also for how we think of race, class, gender and other forms of oppression and liberation, globally. Restricted to junior standing.

PHIL434 - Media Ethics 434-3 Media Ethics. (Same as JRNL 434) Explores the moral environment of the mass media and the ethical problems that confront media practitioners. Models of ethical decision-making and moral philosophy are introduced to encourage students to think critically about the mass media and their roles in modern society.

PHIL441 - Philosophy of Politics 441-3 Philosophy of Politics. (Same as POLS 403) The theory of political and social foundations; the theory of the state, justice, and revolution. Classical and contemporary readings such as: Plato, Aristotle, Hobbes, Locke, Rousseau, Marx, Dewey, Adorno and others. Prerequisite: PHIL 340 or PHIL 102 or consent of instructor.

PHIL445 - Philosophy of Law 445-3 Philosophy of Law. Study of contemporary philosophical essays on topics at the intersection of law and philosophy, such as abortion on demand, capital punishment, plea bargaining, campus speech codes, legalization of addictive drugs, and animal rights, and of what systematic philosophers, such as Thomas Hobbes, John Locke, John Stuart Mill, Karl Marx, and H.L.A. Hart, have written about the nature of a legal system and the appropriate realm of legal regulation.

PHIL446A - Feminist Philosophy 446A-Feminist Philosophy. (Same as WGSS 456A) A general survey of feminist theory and philosophical perspectives.

PHIL446B - Special Topics Fem Philosophy 446B-Special Topics in Feminist Philosophy. (Same as WGSS 456B) A special area in feminist philosophy explored in depth, such as Feminist Ethics, French Feminism, Feminist Philosophy of Science, etc.

PHIL446C - Women Philosophers 446C-3 Women Philosophers. (Same as WGSS 456C) Explores the work of one or more specific women philosophers, for example Hannah Arendt, Simone DeBeauvoir, etc.

PHIL450 - Transcendentalism 450-3 American Transcendentalism. This course will study the rise of Transcendentalism as a philosophical movement in early Nineteenth Century New England. Focus will be on Ralph Waldo Emerson and Henry David Thoreau with possible attention to Margaret Fuller and other figures like Hedge, Parker and Brownson.

PHIL451 - Hist African Amer Philosophy 451-3 History of African American Philosophy. (Same as AFR 499A) A survey of major thinkers and themes in the history of African American Philosophy from colonial times to the 20th century. Prerequisite: at least one previous course in either Philosophy or Africana Studies with a grade of C or better.

PHIL455 - Philosophy of Race 455-3 Philosophy of Race. (Same as AFR 499B) A survey and critical examination of a range of theories on the nature and meaning of "race," the intersection of race with class and gender, and the promotion of racial progress. Such theories include racial realism and idealism, racial biologism, cultural race theory, social constructivist theory, integrationism, separatism, racial eliminativism, cosmopolitanism, and especially critical race theory. Prerequisite: at least one previous course in Philosophy or Africana Studies with a minimum grade of C.

PHIL459 - Topics Africana Philosophy 459-1 to 6 Topics in Africana Philosophy. (Same as AFR 499C) A seminar on varying topics, themes, and figures in African, African American, and/or Caribbean Philosophy, e.g., "W.E.B. Du Bois and His Contemporaries," "Pan-Africanism," "Philosophies of Liberation," "Black Feminism," "Contemporary African Philosophy," "Philosophies of the Caribbean." Prerequisite: At least one previous course in Philosophy or Africana Studies with a minimum grade of C.

PHIL460 - Philosophy of Art 460-3 Philosophy of Art. We will examine several important theories that define art by focusing in on only one aspect, for example, imitation, expression, form, institutional setting, or even indefinability. What role does imagination play in each of these accounts, and does this tell us something important about how people experience their world?

PHIL468A - Kant: Theoretical Philosophy 468A-3 Kant-Theoretical Philosophy.

PHIL468B - Kant: Practical Philosophy 468B-3 Kant-Practical Philosophy.

PHIL468C - Kant: Aesthetics/Teleology/Rel 468C-3 Kant-Aesthetics, Teleology and Religion.

PHIL469 - Hellen & Roman Phil-Augustine 469-3 Hellenistic and Roman Philosophy to Augustine. (Same as CLAS 469) The career of philosophy during the Hellenistic, Roman and Early Medieval period, especially as a means of personal salvation, exploring such figures and movements as: Epicurus, Stoicism, the Middle Academy, Skepticism, Gnosticism, Plotinus, Early Christianity, Augustine, and Boethius. Prerequisite: PHIL 304 or consent of instructor.

PHIL470A - Greek Philosophy-Plato 470A-3 Greek Philosophy-Plato. (Same as CLAS 470A) Survey of Plato's dialogues mostly selected from those of the middle period (Meno, Phaedo, Symposium, Republic, Phaedrus), perhaps along with some from the early period (especially Protagoras) and late period (Sophist, Timaeus).

PHIL470B - Greek Philosophy-Aristotle 470B-3 Greek Philosophy-Aristotle. (Same as CLAS 470B) A general survey of the Aristotelian philosophy including the theory of nature, metaphysics, ethics, and political philosophy. Readings will consist of selections from the corpus.

PHIL471A - Medieval Philosophy 471A-3 History of Medieval Philosophy. An examination of some of the most important figures and themes in medieval philosophical thought. Medieval debates in the area of metaphysics, natural philosophy, epistemology, ethics and politics will be explored in reading the works of such figures as Augustine, Boethius, Abelard Avicenna, Averroes, Maimonides, Bonaventure, Thomas Aquinas, Duns Scotus, Ockham and Nicholas of Cusa. Prerequisite: PHIL 304 or consent of instructor.

PHIL471B - The Medieval Thinker 471B-3 The Medieval Thinker. An examination of the thought of one of the central and most influential figures of the medieval world. Possible subjects of the course are Augustine of Hippo, Al-Ghazali, Moses Maimonides, Bonaventure, Thomas Aquinas, Duns Scotus, Dante Alighieri or William Ockham. Prerequisite: PHIL 304 or consent of instructor.

PHIL472 - The Rationalists 472-3 The Rationalists. Study of the philosophy of one or more of Descartes, Spinoza, Leibniz, Malebranche, Wolff. Prerequisite: PHIL 305A or B or consent of instructor.

PHIL473A - The Empiricists-Locke 473A-3 The Empiricists-Locke. Study of the principles of British empiricism as represented by Locke. May also include study of Berkeley. Prerequisite: PHIL 305 or consent of instructor.

PHIL473B - The Empiricists-Hume 473B-3 The Empiricists-Hume. Study of the principles of British empiricism as represented by Hume. May also include study of Berkeley. Prerequisite: PHIL 305 or consent of instructor.

PHIL474 - Aristotle's Ethics 474-3 Aristotle's Ethics. This course will focus on reading Aristotle's Nicomachean Ethics. Topics will include: the idea of a well-lived life (happiness), the relation of reason and desire, character formation, deliberative and moral reasoning, the types of human excellence, friendship and the role of philosophy in a well-lived life. Readings may include: Greek drama (e.g., Aeschylus, Medea), Aristotle's Politics, and contemporary writers in "virtue ethics." Prerequisite: PHIL 304 with a grade of B or better.

PHIL475 - Topics in Asian Philosophy 475-3 Topics in Asian Philosophy. Extended examination of one or two major texts, figures or philosophical schools in Asian philosophy. Topics vary; students are advised to consult with the instructor.

PHIL477 - Indian Philosophy 477-3 Indian Philosophy. An examination of several major traditions and texts of Indian philosophy, such as Vedanta, Nyaya, the Upanishads, the Bhagava Gita, and contemporary political philosophy, with an emphasis on their social and historical contexts.

PHIL478 - Buddhist Philosophy 478-3 Buddhist Philosophy. An examination of several major philosophical traditions or figures in Buddhism, such as Madhyamika, Yogacara, Zen, Mind-Only, and the Kyoto school, emphasis on their social and historical contexts.

PHIL479 - Chinese Philosophy 479-3 Chinese Philosophy. An examination of several major traditions of Chinese philosophy, such as Confucianism, Taoism, Mohism and Maoism, Neoconfucianism, with an emphasis on their social and historical contexts.

PHIL480 - History of Analytic Philosophy 480-3 History of Analytic Philosophy. An introduction to the works of several major 20th Century philosophers in the analytic tradition, including several of the following: Frege, Russell, Moore, Wittgenstein (early and later), members of the Vienna Circle, Ayer, Ryle, Quine, Putnam, Davidson. Includes discussion of challenges to the tradition that have developed within it.

PHIL482 - Recent European Philosophy 482-3 Recent European Philosophy. Philosophical trends in Europe from the end of the 19th Century to the present. Phenomenology, existentialism, the new Marxism, structuralism, and other developments. Language, history, culture and politics.

PHIL485 - The Presocratics 485-3 The Presocratics. The course will survey the Presocratic movement from the Milesians, Heraclitus and the Pythagoreans to the Eleatics, Empedocles, Anaxagoras and Democritus. Topics will include: the idea of nature, origin/source/principle (arche), the mathematical and nature, Being, pluralism and monism, the atomic theory. Some attention may be paid to the Sophists and the Epicureans. Prerequisite: PHIL 304 with a minimum grade of B.

PHIL486 - Early American Philosophy 486-3 Early American Philosophy. From the Colonial Era to the Eve of World War I. This course will trace the transplantation of European philosophy to the New World and watch its unique process of development. Movements such as Puritanism, the theory of the American Revolution, the philosophical basis of the Constitution, transcendentalism, idealism, Darwinism and pragmatism and such figures as: Jonathan Edwards, Thomas Jefferson, James Madison, Ralph Waldo Emerson, Josiah Royce, Charles Sanders Peirce, and William James.

PHIL487 - Recent American Philosophy 487-3 Recent American Philosophy. From World War I to the Present. The major American philosophers of the 20th Century, covering such issues as naturalism, emergentism, process philosophy, and neopragmatism. Figures include: John Dewey, George Herbert Mead, George Santayana, Alfred N. Whitehead, C. I. Lewis, W. V. Quine, and Richard Rorty.

PHIL490 - Special Problems 490-1 to 8 Special Problems. Hours and credits to be arranged. Courses for qualified students who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics. Special approval needed from the department.

PHIL491 - Undergrad Directed Readings 491-1 to 6 Undergraduate Directed Readings. Supervised readings for qualified students. Open to undergraduates only. Additional hours beyond three (3) must have approval of the Director of Undergraduate Studies. Special approval needed from the instructor.

PHIL499 - Senior Thesis 499-3 Senior Thesis. A paper on a topic agreed to by the student and a faculty thesis director. The paper should be of sufficient length to manifest the student's mastery of a philosophical area and logical and critical skills. Not for graduate credit. Special approval needed from the instructor and department.

PHIL500 - Metaphysics 500-3 Metaphysics. Seminar focusing on readings taken from major classical to contemporary writings in the subject of metaphysics (e.g., Aristotle's Metaphysics, Descartes' Principles, Whitehead's Process and Reality, etc.) or on special movements or on problems in the subject (e.g., substance, causation, reductionism, etc.).

PHIL501 - Philosophy of Religion 501-3 Philosophy of Religion. Analysis of a problem in philosophical theology or the phenomenology of religion or of the work of a particular thinker.

PHIL530 - Theory of Knowledge 530-3 Theory of Knowledge. Seminar focusing on readings taken from major classical to contemporary writings in the theory of knowledge (e.g., Plato, Theaetetu; Aristotle, De Anima; Locke, Essay Concerning Human Understanding; Quine, Ontological Relativity; Rorty, The Mirror of Nature, etc.) or on movements or on problems in the subject (the object of knowledge, justification, method, etc.).

PHIL542 - Political & Legal Philosophy 542-3 Political and Legal Philosophy. Relations of law, morality, and politics, and consideration of problems and issues in philosophy of law.

PHIL545 - Ethics 545-3 Ethics. An examination of the fundamental assumptions underlying twentieth century British and American moral theory. Special attention is given to recent attempts to develop a psychologically realistic moral philosophy that avoids both moral absolutism and extreme forms of relativism.

PHIL551 - Introduction to Teaching 551-1 Introduction to Teaching and the Profession. Introduction to the methodology and ethics of teaching philosophy; supervision of teaching assistants. Restricted to philosophy graduate students on assistantship contract.

PHIL552 - Teaching Practicum 552-1 Teaching Practicum. Ongoing supervision of teaching assistants and discussion of pedagogical, ethical and professional issues. Prerequisite: PHIL 551.

PHIL553 - Supervision of Teaching 553-1 Supervision of Teaching for Graduate Assistants. Instruction in the methods of teaching philosophy and direct supervision of course teaching. Prerequisite: PHIL 551.

PHIL558 - Phenomenology Research Group 558-3 Phenomenology Research Group. The Phenomenology Research Group is a forum for doing phenomenology. Each year we focus on a particular theme. Beginning with first-person perspectives, we examine how something becomes meaningful for us in experience, and we inquire after cross-cultural structures of those experiences. Since the touchstone for such reflection is experience, the orientation of scholarship is problem-based and contextual. Satisfactory/Unsatisfactory Grades.

PHIL560 - Aesthetics 560-3 Aesthetics. Selected topics or writings.

PHIL562 - Phil of Human Communication 562-3 Philosophy of Human Communication. (See CMST 562)

PHIL563 - Philosophy of Nietzsche 563-3 Philosophy of Nietzsche. A reading of Nietzsche's works and critical discussion of his major themes in light of their historical and contemporary reception.

PHIL564 - Frankfurt Schl Critical Theory 564-3 Frankfurt School Critical Theory. An examination of the conceptual foundations and historico-philosophical theories of the Institute for Social Research School, known as critical theory, covering one or more of the major first- and second-generation thinkers: Horkheimer, Adorno, Marcuse, Habermas.

PHIL565 - Continentl Feminist Philosophy 565-3 Continental Feminist Philosophy. (Same as WGSS 565) An examination of major figures and problems in continental feminism, focusing on metaphysical, ethical, political, and aesthetic theories in the works of Beauvoir, Kristeva, Irigaray, Butler, and Kofman.

PHIL566 - Psychoanalysis 566-3 Psychoanalysis. An examination of psychoanalytic theory in the context of continental philosophy, studying the foundation of psychoanalysis and major developments since Freud, including French psychoanalytic theory, the British School, and developments in American psychoanalysis.

PHIL570 - American Idealism 570-3 American Idealism. One or more American idealists. Recent seminars have been devoted to the thought of Brand Blanshard and Peter A. Bertocci.

PHIL573A - American Realism-New Realism 573A-3 American Realism-New Realism. An examination of selected works of representatives in the realist tradition of American philosophy.

PHIL573B - American Realism-Critical 573B-American Realism-Critical Realism. An examination of selected works of representatives in the realist tradition of American philosophy.

PHIL573C - American Realism-Scientific 573C-3 American Realism-Scientific Realism. An examination of selected works of representatives in the realist tradition of American philosophy.

PHIL573D - American Realism-Post Realism 573D-3 American Realism-Post Realism. An examination of selected works of representatives in the realist tradition of American philosophy.

PHIL577A - Classical American Philos-Peirce 577A-3 Classical American Philosophy-Peirce. A focused study of various aspects of Peirce's philosophy such as his pragmatism and semiotics.

PHIL577B - Classical Amer Philos-James 577B-3 Classical American Philosophy-James. A critical examination of James' pragmatism, radical empiricism and pluralism.

PHIL577C - Classical Amer Philos-Dewey 577C-3 Classical American Philosophy-Dewey. An examination of such themes in Dewey's philosophy as the influence of Darwin, nature and experience, aesthetics, technology and democracy.

PHIL577D - Classical Amer Philosophy-Mead 577D-3 Classical American Philosophy-Mead. A critical examination of Mead's theories regarding the social self and social life.

PHIL578 - Husserl 578-3 Husserl. A careful and systematic reading of Husserl's major works or treatment of important themes throughout his writings, such as, the problem of evidence, perception and rationality, time-consciousness, phenomenology of association, or the lifeworld.

PHIL579 - Heidegger 579-3 Heidegger. This course features a close reading of Heidegger's masterwork, BEING AND TIME, supplemented by selected later essay and secondary literature as suggested by the instructor.

PHIL580 - The Pre-Socratics 580-3 The Pre-Socratics. The emergence of Greek philosophy in the sixth century B.C., the Milesians, Heraclitus and the Pythagoreans; the Eleatic movement and Parmenides, and the critical systems of Empedocles, Anaxagoras, and atomism; concluding with a discussion of the Sophistic movement and Socrates. Epic, lyric and dramatic literature of the period may be examined as well as philosophical writings.

PHIL581 - Plato 581-3 Plato. Intensive reading of selected texts focusing on some aspect of Plato's thought or on Platonism as a movement.

PHIL582 - Aristotle 582-3 Aristotle. Intensive reading on several texts, analyzing selected portions of Aristotle's thought.

PHIL583 - Merleau-Ponty 583-3 Merleau-Ponty. This course will focus on a major work by Merleau-Ponty (such as the Phenomenology of Perception), or will develop a major theme (perception, aesthetics, politics) in his thought by consulting several of his works.

PHIL584 - Levinas 584-3 Levinas. This course will be devoted to a detailed and systematic study of one of Levinas's major works, such as Totality and Infinity or Otherwise than Being, or to a survey of key elements of his thought contained in his many important essays.

PHIL587 - Kant 587-3 Kant.

PHIL588 - Hegel 588-3 Hegel.

PHIL589 - Scheler 589-3 Scheler. This course is devoted to a systematic reading of Scheler's works that concern any one of the many dimensions of his thought, for example, the nature of "person", ethics and value theory, the philosophy of religion, the sociology of knowledge, or politics.

PHIL590 - Graduate Seminar 590-1 to 12 General Graduate Seminar. Selected topics or problems in philosophy. Repeatable for 12 hours per term, 30 hours toward degree.

PHIL591 - Readings in Philosophy 591-1 to 16 Readings in Philosophy. Supervised readings for qualified students. Prerequisite: Students must have written permission from the Graduate Director to register for more than six hours at each level.

PHIL599 - Thesis 599-2 to 6 Thesis. Minimum of four hours to be counted towards a Master's degree.

PHIL600 - Dissertation 600-3 to 32 (1 to 16 per semester) Dissertation. Repeatable for 16 hours per term, 30 hours toward degree.

PHIL601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

PHIL699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Philosophy Faculty

Alexander, Thomas, Professor, Ph.D., Emory University, 1984.

Auxier, Randall E., Professor, Ph.D., Emory University, 1992.

Beardsworth, Sara, Associate Professor, Ph.D., University of Warwick, 1994.

Clarke, David S., Jr., Professor, Emeritus, Ph.D., Emory University, 1964.

Eames, Elizabeth R., Professor, Emerita, Ph.D., Bryn Mawr College, 1951.

Gatens-Robinson, Eugenie, Associate Professor, Emerita, Ph.D., Southern Illinois University, 1984.

Gillan, Garth J., Professor, Emeritus, Ph.D., Duquesne University, 1966.

Hahn, Robert A., Professor, Ph.D., Yale University, 1976.

Hickman, Larry A., Professor, Emeritus, Ph.D., University of Texas at Austin, 1971.

Kelly, Matthew J., Associate Professor, Emeritus, Ph.D., University of Notre Dame, 1963.

Manfredi, Pat A., Associate Professor, Emeritus, Ph.D., University of Notre Dame, 1982.

Plochmann, George Kimball, Professor, Emeritus, Ph.D., University of Chicago, 1950.

Schedler, George E., Professor, Emeritus, Ph.D., University of California at San Diego, 1973; J.D., Southern Illinois University, 1987.

Steinbock, Anthony J., Professor, Ph.D., SUNY, Stony Brook, NY, 1993.

Stickers, Kenneth W., Professor, Ph.D., De Paul University, 1982.

Tyman, Stephen, Associate Professor, University of Toronto, 1980.

Youpa, Andrew, Associate Professor, Ph.D., University of California, Irvine, 2002.

Physiology

The Department of Physiology offers training in mammalian, cellular and comparative physiology, pharmacology, and human anatomy. Students majoring in physiology are encouraged to gain research experience under faculty supervision. The undergraduate major provides general rather than specialized training in physiology. To become a professional physiologist usually requires the completion of an advanced degree in the field. An undergraduate major in physiology would provide an excellent foundation for those planning a career in teaching or research or a medical field such as medicine, dentistry, veterinary science, nursing or medical technology. Students considering a major in Physiology should discuss their program with the Program Director for Undergraduate Studies in Physiology. A grade of C or better is required in every Physiology course used to satisfy departmental requirements for a degree in Physiology. A student cannot repeat a course or its equivalent in which a grade of B or better was earned without the consent of the department.

Bachelor of Science in Physiology Degree, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	41
College of Science Requirements	6
Supportive Skills to include foreign language (two semesters at 200 level); or two from the following: ENGL 290 or ENGL 291 or ENGL 391 or ENGL 491; PLB 360 or MATH 282; CS 200, CS 201 ²	
Requirements for Major in Physiology	(11)+58
PHSL 310	5
PHSL 410A, PHSL 410B	8
Physiology electives - (11 hours at the 300 or 400-level)	(2)+9
BIOL 211	(3)+1
BIOL 304, BIOL 305, BIOL 306, BIOL 409 (any two..)	6
CHEM 200, CHEM 201, CHEM 210, CHEM 211, CHEM 340, CHEM 341, CHEM 342, CHEM 343, CHEM 350, CHEM 351	(3)+20
PHYS 203A, PHYS 203B; PHYS 253A, PHYS 253B	8
MATH 150 ³	(3)+1
Electives	15
Total	120

1 Total of eleven hours of biology, chemistry, mathematics and physiology elective course work are accounted for in the 41-hour Core Curriculum requirement.

2 If two years of a foreign language are taken to complete this requirement, the total hours will be 16. The elective hours are reduced by 10 hours.

3 Prerequisite is MATH 111. The elective hours are reduced by 4 hours for students who place into a course lower than calculus.

Physiology Minor

A minor in physiology requires completion, with at least a C grade, of PHSL 410A, PHSL 410B (8 hours) and eight hours of 300 or 400-level courses offered by the department.

Junior-Senior Honors Program

Juniors who have shown outstanding ability in biology courses and related subjects in their freshman and sophomore years may apply for acceptance into the honors program. Honors students do independent study in the physiological sciences (PHSL 491) during their junior and senior years.

Physiology Courses

PHSL201 - Human Physiology 201-3 Human Physiology. (University Core Curriculum) A course which relates the normal function of the human body to the disruptions which occur in a variety of disease states. Three lecture hours per week. Not open to students who have taken 310. With 208 (if not used for health) satisfies University Core Curriculum Science Group II requirement.

PHSL208 - Lab Experiences in Physiology 208-1 Laboratory Experiences in Physiology. (Advanced University Core Curriculum course) Laboratory course which provides experiences with small animal experimentation and measurements made on the human subject. One two-hour laboratory per week. Prerequisite: completion of, or current enrollment in, PHSL 201. With 201 (if not used for health) satisfies the University Core Curriculum Science Group II requirement. Lab fee: \$20.

PHSL240A - A & P for Nursing 240A-4 Anatomy & Physiology for Nursing. A-B Sequence. Functional architecture of the human body. Tissues, skeletal, muscular and nervous systems. Three hour lectures and one three-hour laboratory per week. Not for major credit. Prerequisites: ZOOL 118 and CHEM 140A. Restricted to Pre-Nursing and Nursing majors. Lab fee: \$25.

PHSL240B - A & P for Nursing 240B-4 Anatomy & Physiology for Nursing. A-B Sequence. Functional architecture of the human body. Continuation of A. Endocrine, Circulatory, Respiratory, Digestive and Urinary systems. Three hours lectures and one three-hour laboratory per week. Not for major credit. Prerequisites: PHSL 240A. Restricted to Pre-Nursing and Nursing majors. Lab fee: \$25.

PHSL257 - Concurrent Work Experience 257-1 to 6 Concurrent Work Experience. Under exceptional circumstances, and with prior approval of the departmental chair, credit may be granted for practical experience or other work directly related to physiology. Mandatory Pass/Fail.

PHSL258 - Previous Work Experience 258-1 to 6 Previous Work Experience. Under exceptional circumstances, and after petition to the departmental chair, credit may be granted for practical experience or other work directly related to physiology. Mandatory Pass/Fail.

PHSL259 - Occupational Education Credit 259-2 to 8 Occupational Education Credit. Under special circumstances, advanced training in a paramedical or other field directly related to physiology can be used as a basis for granting credit in physiology. Such credit is sought by petition to the chair of department and requires approval of dean of the College of Science.

PHSL301 - Basic Anatomy w/ Lab 301-4 Basic Human Anatomy with Laboratory. Lectures, demonstrations and observations of the prosected body, plus experiences in the anatomy laboratory. Course is designed for students in nursing, mortuary science, biological science, and related disciplines. Three lecture hours and one two-hour laboratory per week. Lab fee: \$20.

PHSL310 - Principles of Physiology 310-5 Principles of Physiology. (Advanced University Core Curriculum Course) Beginning course in human physiology designed for majors in physiology and other biological sciences, and recommended to pre-medical and other students considering biological sciences and health professions. Three lectures per week, one-hour discussion and one two-hour laboratory. Satisfies the University Core Curriculum Human Health requirement in lieu of 201. Prerequisite: BIOL 211; CHEM 200 & 210. Lab fee: \$20.

PHSL320 - Reproduction & Sexuality 320-3 Reproduction and Sexuality. (Same as WGSS 321) Comprehensive course examining the physiological basis of mammalian reproduction and the behavioral aspects of sexuality. Human sexuality and reproductive function is the primary focus. Topics include hormonal control, anatomy, ovulation, sexual response and behavior, fertilization, pregnancy and

parturition. Human specific topics include reproductive medicine, STDs, paraphilias, birth control and infertility. Prerequisite: BIOL 211.

PHSL401A - Adv Human Anatomy w/Lab 401A-5 Advanced Human Anatomy with Laboratory. A-B sequence. Laboratory dissection of the human body with lectures as needed. Primarily for students majoring in physiology, biological sciences, anthropology or pre-medical fields. Prerequisite: PHSL 301. Enrollment by consent of instructor. Lab fee: \$20.

PHSL401B - Adv Human Anatomy w/Lab 401B-5 Advanced Human Anatomy with Laboratory. A-B sequence. Laboratory dissection of the human body with lectures as needed. Primarily for students majoring in physiology, biological sciences, anthropology or pre-medical fields. Prerequisite: PHSL 301. Enrollment by consent of instructor. Lab fee: \$20.

PHSL410A - Mammalian Physiology 410A-4 Mammalian Physiology. Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous systems, muscle and reproduction. Primary course for all students majoring in physiology or related sciences. Four lectures per week. May be taken in any sequence. Prerequisite: CHEM 210, 211; PHYS 203B AND PHYS 253B OR PHYS 205B AND PHYS 255B; PHSL 310.

PHSL410B - Mammalian Physiology 410B-4 Mammalian Physiology. Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous systems, muscle and reproduction. Primary course for all students majoring in physiology or related sciences. Four lectures per week. May be taken in any sequence. Prerequisite: CHEM 210, 211; PHYS 203B AND PHYS 253B OR PHYS 205B AND PHYS 255B; PHSL 310.

PHSL412 - Teaching Methods 412-2 Teaching Methods and Strategies. This online course is designed to introduce instructional theories and methods to students interested in teaching physiology or other similar subjects. It will provide coverage of various methods of classroom instruction, course management, assessment and evaluation. Students should finish the course prepared to be competent in critical teaching practices for lecture and lab courses as well as being proficient in promoting diversity and inclusiveness in the classroom.

PHSL420A - Principles of Pharmacology 420A-3 Principles of Pharmacology. Examines basic principles of pharmacology (pharmacokinetics) and the action of various classes of drugs on living organisms. Drug classes covered include those affecting most organ systems of the human body, such as the nervous, cardiovascular, gastrointestinal and renal systems as well as drugs used for antibiotic and cancer chemotherapy. Three lectures per week. Prerequisite: PHSL 310 or 410, CHEM 340 and 342 (or equivalent).

PHSL420B - Principles of Pharmacology 420B-3 Principles of Pharmacology. Examines basic principles of pharmacology (pharmacokinetics) and the action of various classes of drugs on living organisms. Drug classes covered include those affecting most organ systems of the human body, such as the nervous, cardiovascular, gastrointestinal and renal systems as well as drugs used for antibiotic and cancer chemotherapy. Three lectures per week. Prerequisite: PHSL 310 or 410, CHEM 340 and 342 (or equivalent).

PHSL426 - Comparative Endocrinology 426-3 Comparative Endocrinology. (Same as ANS 426, ZOOL 426) Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues, including mechanisms of transport, receptor kinetics, and signal transduction. Prerequisites: PHSL 310 or ANS 331 or ZOOL 220 with a grade of C. Laboratory/Field Trip Fee: \$15.

PHSL430 - Cellular&Molecular Physiology 430-3 Cellular and Molecular Physiology. This course will examine the molecular and cellular aspects of physiology, with special emphasis on the experiments used to examine the regulation of gene expression, protein activities, and cellular functions in eukaryotes. Topics include: mechanisms regulating gene expression, signaling pathways, cancer biology, and the use of experimental model organisms. Required of Physiology majors. Prerequisite: BIOL 211 & BIOL 213 or CHEM 350 & 351.

PHSL433 - Comparative Physiology 433-3 Comparative Animal Physiology. (Same as ZOOL 433) Variations of the physiological processes in animal phyla, comparison with human physiology, and review of basic physiology principles and comparative aspects of mechanism and function. Prerequisite: BIOL 211, BIOL 212 & BIOL 213 or PHSL 310 with a grade of C or better.

PHSL440A - Biophysics 440A-3 Biophysics. Biomathematics, biomechanics and biotransport. Three lectures per week. Prerequisites: MATH 141 or 150; PHSL 310; PHYS 203 A&B and 253 A&B or PHYS 205 A&B and 255 A&B. May be taken in B,A sequence with consent of instructor.

PHSL440B - Biophysics 440B-3 Biophysics. Bioelectrics and bio-optics applied to physiological problems. Three lectures per week. Prerequisites: MATH 141 or 150; PHSL 310; PHYS 203 A&B and 253 A&B or PHYS 205 A&B and 255 A&B. May be taken in B,A sequence with consent of instructor.

PHSL450 - Advanced Human Sexuality 450-3 Advanced Human Sexuality. (Same as WGSS 449) Advanced, comprehensive course intended to supplement and expand the critical examination of topics covered in PHSL 320, Reproduction and Sexuality. The objectives of this class are to examine the physiological and behavioral basis of human reproduction and sexuality. Examining how humans reproduce from a physiological perspective including all aberrations and clinically relevant dysfunctions, as well as, the spectrum of human sexual behaviors including typical and atypical sexual behavior, paraphilias and diversity of human relationships. Prerequisite: PHSL 320.

PHSL460 - Electron Microscopy 460-2 Electron Microscopy. Lecture course designed to introduce the student to the theory and principles of electron microscopy. Two lecture hours per week. Restricted to senior standing or permission of instructor.

PHSL462 - Biomedical Instrumentation 462-3 Biomedical Instrumentation. Diagnostic and therapeutic modalities related to engineering. Cardiovascular, neural, sensory and respiratory instrumentation. Special approval needed from the instructor.

PHSL470 - Biological Clocks 470-3 Biological Clocks. Study of the temporal aspects of diverse physiological and behavioral functions which possess diurnal and seasonal periodicity. Species covered will include many eukaryotic organisms including plants, but will mainly stress mammals. Oscillations in sleep-wake cycle, locomotion, reproduction, hormonal secretion and numerous other processes will be explored. In addition, the effects of biological clocks in humans and the effect of jet lag and depression will be examined. Prerequisite: PHSL 310.

PHSL490 - Senior Seminar 490-1 Senior Seminar. Readings, writings, presentations and discussions of current topics in physiology. One hour per week. Not for graduate credit. Restricted to senior standing or consent of instructor.

PHSL491 - Independent Research for Honors 491-3 to 8 Independent Research for Honors. Supervised readings and laboratory research in physiology directed by a member of the physiology faculty. Undergraduate honors students only. By special arrangement with the instructor in the physiology department with whom the student wishes to work.

PHSL492 - Special Problems in Physiology 492-1 to 8 Special Problems in Physiology. Supervised readings and laboratory research in physiology directed by a member of the physiology faculty. Open to undergraduate students only. By special arrangement with the instructor in the physiology department with whom the student wishes to work. No more than 3 hours may be counted as electives towards the major in physiology.

PHSL500 - Advanced Seminar in Physl 500-1 to 6 (1 per semester) Advanced Seminar in Physiology. Presentation of research and current literature in physiology. Required of all graduate students in physiology. Graded S/U only.

PHSL501 - Presentation Physiolgcal Data 501-1 Presentation of Physiological Data. Research areas and special topics requisite for conducting scientific research will be presented. Students will learn how to organize a talk on experimental findings in physiology, prepare slides, and communicate effectively in an oral presentation format. Graded S/U only.

PHSL510 - Experimental Methods 510-3 Experimental Methods in Physiology. The main objectives of this course are to acquaint the student with the techniques and the equipment used in modern

research laboratories and to provide instruction in the principles and practice of scientific experimentation. Restricted to Physiology (MCSP) graduate students only.

PHSL511A - Adv Mammalian Physiology 511A-1 to 5 Advanced Mammalian Physiology. Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous system, muscle and reproduction. Four lectures and one seminar per week. Seminar will consist of primary literature discussion and student presentation on areas covered in lecture. Principal lecturer for each of the area topics will lead discussion and assign the primary literature. May be taken in any sequence. Restricted to consent of department. Special approval needed from the instructor.

PHSL511B - Adv Mammalian Physiology 511B-1 to 5 Advanced Mammalian Physiology. Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous system, muscle and reproduction. Four lectures and one seminar per week. Seminar will consist of primary literature discussion and student presentation on areas covered in lecture. Principal lecturer for each of the area topics will lead discussion and assign the primary literature. May be taken in any sequence. Restricted to consent of department. Special approval needed from the instructor.

PHSL520 - Reproduct Function/Sex Behav 520-4 Reproductive Function and Sexual Behavior. Advanced, comprehensive course examining the physiological and behavioral basis of human reproduction and sexuality. Topics include physiology and pathophysiology of the human reproductive system and normal and atypical sexual behavior. Course topics will include didactic presentations and problem-based lab discussions selected by the students selected from lecture or related topics. The class will meet three times weekly for didactic presentations and once a week for a three hour extensive discussion and presentation utilizing self-directed learning strategies and knowledge in a problem-based format, similar to that used in the medical school curricula. Special approval needed from the instructor.

PHSL530 - Advanced Cell Physiology 530-3 Advanced Cellular and Molecular Physiology. This course will examine the molecular and cellular aspects of mammalian physiology using the primary literature as the source of topics for oral presentations and discussions. Special approval needed from the instructor.

PHSL531 - Adv Cellular Physl Lab 531-2 Advanced Cellular Physiology Laboratory. One one-hour lecture and one three-hour laboratory per week, designed to be taken concurrently with PHSL 530. Basic experimental procedures used in studies in cellular physiology.

PHSL533 - Adv Comparative Physiology 533-4 Advanced Comparative Physiology. Advanced concepts and techniques used in current studies in comparative physiology. Three lectures and one discussion period per week.

PHSL540 - Advanced Biophysics 540-3 Advanced Biophysics. Survey of recent biophysical research with emphasis on historical development of current advances. Three lectures per week. Prerequisite: PHSL 440 or its equivalent.

PHSL560B - Physiological Technique 560B-2 Physiological Technique. Prerequisite: PHSL 560A.

PHSL570A - Biological Structure 570A-3 Advanced Physiological Topics-Biological Structure. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570B - Cardiovascular Physiology 570B-3 Advanced Physiological Topics-Cardiovascular Physiology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570C - Respiratory Physiology 570C-3 Advanced Physiological Topics-Respiratory Physiology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570D - Nerve-Muscle Physiology 570D-3 Advanced Physiological Topics-Nerve-Muscle Physiology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570E - Metabolism 570E-3 Advanced Physiological Topics-Metabolism. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570F - Gastrointestinal Physiology 570F-3 Advanced Physiological Topics-Gastrointestinal Physiology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570G - Neurophysiology 570G-3 Advanced Physiological Topics-Neurophysiology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570H - Radiation Biology Physiology 570H-3 Advanced Physiological Topics-Radiation Physiology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570I - Environmental Physiology 570I-3 Advanced Physiological Topics-Environmental Physiology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570J - Biomathematics 570J-3 Advanced Physiological Topics-Biomathematics. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570K - Biomedical Computing 570K-3 Advanced Physiological Topics-Biomedical Computing. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570L - Endocrinology 570L-3 Advanced Physiological Topics-Endocrinology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570M - Animal Care 570M-3 Advanced Physiological Topics-Animal Care. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570N - Biophysics 570N-3 Advanced Physiological Topics-Biophysics. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570O - Pharmacology 570O-3 Advanced Physiological Topics-Pharmacology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570P - Special Topics 570P-3 Advanced Physiological Topics-Special Topics. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic

sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570Q - Reproductive Physiology 570Q-3 Advanced Physiological Topics-Reproductive Physiology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL570R - Renal Physiology 570R-3 Advanced Physiological Topics-Renal Physiology. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years.

PHSL571 - Res/Probs:Electron Microscopy 571-3 Research and Problems in Biological Transmission Electron Microscopy (TEM). Laboratory course designed to provide experience in techniques for biological electron microscopy. Student, with the aid of the instructor, designs and carries out a project in transmission electron microscopy. Two three-hour laboratories per week. Prerequisite: PHSL 460 or special permission of instructor.

PHSL573 - Neuroanatomy 573-3 Neuroanatomy. A detailed survey of human neuroanatomy. The course will include radiographic, cross-sectional and developmental anatomy of the nervous system. Dissection of the human brain will occur in general laboratory sessions. Three lectures per week.

PHSL574 - Neuropharmacology PHSL 574-3 Neuropharmacology. (Same as PHRM 574) A detailed examination of the biochemical aspects of neuropharmacology with emphasis on neurotransmitters-their synthesis, storage, release and metabolism in the central and peripheral nervous system. Considerable emphasis is placed on major research developments (both past and present) that influence how one studies the action of drugs on the nervous system. Prerequisite: PHSL 410, and CHEM 450, or equivalent.

PHSL575 - Neuroendocrinology 575-3 Neuroendocrinology. Designed to investigate and discuss the current research and historical aspects of the field of neuroendocrinology. In addition, designed to have students examine and evaluate current literature in the field and through discussion have them present their analysis of the research. One hour of lecture, one hour of discussion of textual material, one hour of multiple reports on library research. Prerequisite: PHSL 410A, B or equivalent, or an undergraduate/graduate endocrinology course, or consent of instructor.

PHSL581A - Medical Educ Multimedia 581A-3 Multimedia in Medical Education. Students will participate in the daily discussions of a medical education multimedia corporation. Emphasis will be on process and instructional design. Students will be supervised by team members in the production of commercial educational packages. Skills to be acquired include the ability to digitize images and sound, and to create a Power Point presentation on a topic of the student's choice.

PHSL581B - Adv Medical Ed Multimedia 581B-6 Advanced Multimedia in Medical Education. Intended to be a "hands on" course which contributes significantly to the development of multimedia teaching materials for medical education. Students will be assigned to a project as part of a development team. Under supervision of the team leader, they will assist in software design, material preparation and assembly. Prerequisite: PHSL 581A.

PHSL582 - Clinical Appl/Radiology 582-3 Clinical Application/Radiology. The study of human anatomy through imaging techniques such as standard x-rays, computer assisted tomography (CT) and magnetic resonance imaging (MRI). The course will include individualized work with clinical specialists in a hospital setting for 1/2 day per week with times to be arranged. Restricted to graduate status, acceptance into anatomy certificate program. Graded S/U.

PHSL590 - Readings or Research Cur Topcs 590-1 to 4 Readings or Research in Current Physiological Topics. By special arrangement with the instructor with whom the student wishes to work. Graded S/U only.

PHSL598 - Research 598-1 to 48 (1 to 12 per semester) Research. The credit hours selected for this course registration will be determined by the major professor of the student. In a typical semester no more

than six hours will be taken by a student except under special circumstances. Graded S/U only. Special approval needed from the instructor.

PHSL599 - Thesis Research 599-1 to 6 Thesis Research. Research for thesis for Master's degree.

PHSL600 - Dissertation 600-1 to 32 (1 to 16 per semester) Dissertation Research. Research for dissertation for Ph.D. degree.

PHSL601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

PHSL699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Physiology Faculty

Arbogast, Lydia A., Professor, Ph.D., Indiana University, 1988.
Bany, Brent, Associate Professor, Ph.D., University of Western Ontario, 1997.
Bartke, Andrzej, Professor, Emeritus, Ph.D., University of Kansas, 1965.
Browning, Ronald A., Professor, Emeritus, Ph.D., University of Illinois Medical Center, Chicago, 1971.
Cai, Xiang, Assistant Professor, Ph.D., Sun Yat-Sen University of Medical Sciences, China, 2000.
Collard, Michael W., Associate Professor, Emeritus, Ph.D., Washington State University, 1987.
Dunagan, Tommy T., Professor, Emeritus, Ph.D., Purdue University, 1960.
Ellsworth, Buffy S., Assistant Professor, Ph.D., Colorado State University, 2002.
Ferraro, James S., Associate Professor, Ph.D., The Chicago Medical School, 1984.
Hales, Dale B., Professor and Chair, Ph.D., University of Colorado Health Sciences Center, 1983.
Hales, Karen H., Assistant Professor, Ph.D., University of Colorado Health Sciences Center, 1985.
Hayashi, Kanako, Assistant Professor, Ph.D., Iwate University, Japan, 2002.
Huggenvik, Jodi I., Associate Professor, Emerita, Ph.D., Washington State University, 1985.
Jensik, Philip J., Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2009.
Macklin, Lauren N., Instructor, M.S., Southern Illinois University Carbondale, 2011.
MacLean, James A., Assistant Professor, Ph.D., University of Missouri, 2000.
Murphy, Laura L., Professor, Emerita, Ph.D., Medical College of Georgia, 1983.
Narayan, Prema, Associate Professor, Ph.D., University of Minnesota, 1984.
Patrylo, Peter, Associate Professor, Ph.D., Rutgers University/UMDNJ-RWJMS, 1991.
Raymer, Angela M., Instructor, M.S., Southern Illinois University Carbondale, 1999.
Strader, April, Associate Professor Ph.D., University of Wisconsin, 2002.
Zaczek, Denise J., Instructor, Ph.D., Southern Illinois University, 2003.
Zheng, Zhengui (Patrick), Assistant Professor, Ph.D., Shanghai University of Traditional Chinese Medicine, 1997.

Physics

As the most basic of the physical sciences, physics can serve as the building block for many different careers. Using their understanding of physical principles, physicists have been at the forefront of many of the most exciting discoveries of the twentieth century and will continue to lead the way to many exciting discoveries in the future. They have contributed to a wide range of areas, including, but not limited to, biology, chemistry, communication, computer science, electronics, engineering, finance, managerial consulting, geophysics, medical physics, and transportation.

The SIU Carbondale Physics department focuses on applied physics. Therefore the department seeks to provide undergraduate students with the skills necessary to apply their basic understanding of physics to real-world problems for which the solutions are of near-future concern. With this in mind, the physics

department at SIU offers a first-rate undergraduate program with four different specializations in applied physics-biomedical physics, computational physics, materials and nanophysics, and the traditional physics curriculum. These specializations are targeted to high-demand areas of science and take advantage of the expertise of our faculty. Members of the physics faculty are involved in a wide range of physics research projects, both theoretical and experimental, including low temperature physics, surface physics, materials physics, superconductivity, magnetism, synchrotron radiation, infrared spectroscopy, solid-state physics, quantum mechanics, quantum computation, computational physics, and statistical mechanics. Participation in faculty research projects by students is strongly encouraged and can be very useful to students since it provides them with faculty mentors, and experience applying learned skills to real-world physics problem-solving.

Physics is an exciting field; its graduates are in high demand and enjoy high salaries and job security. Employment opportunities in physics are varied and abundant, from industrial research and development to teaching. Physicists are employed by all sectors of society, including health care, various corporations, government, and universities. Students who wish to learn more are encouraged to contact the physics department directly or visit the department web site at physics.siu.edu.

A minimum GPA of 2.0 in all physics and mathematics course work is needed in order for a student to receive a degree in Physics. In terms of credit hour requirements toward a degree in Physics, a course will be counted only once. A student may not repeat a course or its equivalent in which a grade of B or better was earned without the consent of the department.

Bachelor of Science Degree in Physics, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Science Academic Requirements	9
Biological Science (3 hours included in the UCC Life Science hours)	3
Mathematics - completed with the major Physical Sciences - completed with the major Supportive Skills - CS 201 or CS 202 or CS 280 or CS 300;	
ENGL 290 or ENGL 291 or ENGL 391; MATH 282 or MATH 483; 1 or 2 semesters of a foreign language	6
Physics Major Requirements	72
CHEM 200 or CHEM 200H, CHEM 201, CHEM 202 or CHEM 202H (3 hours included in the UCC Physical Science hours)	2
MATH 150, MATH 221, MATH 250, MATH 251, MATH 305, (3 hours included in the UCC Mathematics hours)	14
MATH 405 or MATH 406 or MATH 407 or MATH 409 or MATH 450 or MATH 455 or MATH 475	3
PHYS 100, PHYS 205A, PHYS 206A, PHYS 255A, PHYS 205B, PHYS 206B, PHYS 255B, PHYS 305, PHYS 355, PHYS 301, PHYS 310, PHYS 320, PHYS 420, PHYS 430, PHYS 440, PHYS 445, PHYS 450	39

Degree Requirements	Credit Hours
Physics electives from one of the following groups	14
General Physics Electives PHYS 390, PHYS 424, PHYS 425, PHYS 428, PHYS 431, PHYS 432, PHYS 458, PHYS 470, PHYS 476, PHYS 490; CS 215, CS 220, CS 475, CS 476	
Computational Physics PHYS 476C; CS 202, CS 215, CS 220, plus electives from the General Physics list above to total 14 hours Not required: PHYS 450 (Three hours in lieu of PHYS 450) (Three hours included in UCC Supportive Skills)	
Materials and Nanophysics PHYS 425, PHYS 476M plus electives from the General Physics list above to total 14 hours	
Biomedical Physics PHYS 476B; BIOL 211, BIOL 212, BIOL 213 Plus a minimum of 16 hours from the following Biomedical Physics Electives: CHEM 210, CHEM 211, CHEM 212, CHEM 340, CHEM 341, CHEM 350, CHEM 351 MICR 301, MICR 302, Not required: PHYS 440 and PHYS 450 (Six hours in lieu of PHYS 440 and PHYS 450) (Seven hours included in UCC and COS Biological/Life Sciences)	
Total	120

Physics Minor

A minor in physics requires 17 hours and must include PHYS 203A,B, and PHYS 253A,B, or PHYS 205A,B, and PHYS 255A,B, as well as PHYS 305 and PHYS 355 and five hours from any 300- or 400-level physics course except PHYS 470.

Physics Courses

PHYS100 - Undergraduate Seminar 100-1 Undergraduate Seminar. Lectures and discussions by students, faculty and invited guests on topics in physics. Will include discussions on employment opportunities, graduate school admission and undergraduate research. Graded: Pass/Fail.

PHYS101 - Physics that Changed World 101-3 Physics that Changed the World. (University Core Curriculum) [IAI course: P1 901L] This course will survey some of the most important developments in physics which have occurred over the past two millennia. Along the way, students will be introduced to fundamental physical principles such as energy conservation. Topics will include early astronomy, laws of motion, electricity, magnetism, waves, quantum mechanics and relatively. Lab fee: \$20.

PHYS102 - Everybody's Einstein 102-1 Everybody's Einstein. A non-mathematical presentation of Einstein's relativity theories on a popular level. No prerequisite.

PHYS103 - Astronomy 103-3 Astronomy. (University Core Curriculum) Fundamental concepts of the physical sciences are used in the exploration of the observable universe. Studies include the

history and techniques of astronomy, planets, stars, black holes, galaxies and cosmology. Lectures are supplemented by outdoor astronomical observations and/or indoor laboratory exercises. Lab fee: \$20.

PHYS201 - Introduction to Physics 201-1 Introduction to Physics. Vectors (definitions, operations, etc.). Kinematics in one and two dimensions (including projectile motion). Newton's Laws of Motion. One hour of lecture and one hour of problem discussion per week. This course will be required for students wishing to enroll in PHYS 205A if they either: - have a score in a Physics placement test indicative of their need for having a course in these topics; or - if they have had no previous Physics classes.

PHYS203A - College Physics 203A-3 College Physics. (Advanced University Core Curriculum course) [IAI Course: P1 900] Mechanics, heat, and sound. Prerequisite: completing with grade C or better MATH 109 or 111 or 125 or 140 or 150. PHYS 203 A or B with PHYS 253 satisfies a Science Group I Core Curriculum requirement in lieu of PHYS 101 or 103.

PHYS203B - College Physics 203B-3 College Physics. (Advanced University Core Curriculum course) Electricity, magnetism, light, aspects of modern physics. Prerequisite: PHYS 203A. PHYS 203 A or B with PHYS 253 satisfies a Science Group I Core Curriculum requirement in lieu of PHYS 101 or 103.

PHYS205A - University Physics 205A-3 University Physics. (Advanced University Core Curriculum course) [IAI course: P2 900] Designed to meet requirements of physics, engineering and chemistry majors. Mechanics, heat and waves. Prerequisites: MATH 150 with grade of C or better. With PHYS 255A, satisfies the UCC Science Group I requirement instead of PHYS 101 or 103. Not for graduate credit.

PHYS205B - University Physics 205B-3 University Physics. (Advanced University Core Curriculum course) Designed to meet requirements of physics, engineering and chemistry majors. Electricity, magnetism and optics. Prerequisites: PHYS 205A and MATH 250 each with a grade of C or better. With PHYS 255B satisfies the UCC Science Group I requirement instead of PHYS 101 or 103. Not for graduate credit.

PHYS206A - Problem Solving for PHYS 205A 206A-1 Problem Solving for PHYS 205A. Students will learn tips and techniques for solving problems in 205A. This will be done in a problem-based learning environment by solving problems in groups with leadership from the instructor. Prerequisite: MATH 150 with a grade of C or better. Co-requisite: concurrent enrollment in PHYS 205A.

PHYS206B - Problem Solving for PHYS 205B 206B-1 Problem Solving for PHYS 205B. Students will learn tips and techniques for solving problems in 205A. This will be done in a problem-based learning environment by solving problems in groups with leadership from the instructor. Co-requisite: Concurrent enrollment in PHYS 205B. Prerequisite: MATH 150 with a grade of C or better.

PHYS253A - College Physics Lab 253A-1 College Physics Laboratory. (Advanced University Core Curriculum course) [IAI Course: P1 900L] One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 203A,B respectively; if the corresponding lecture course is dropped, the laboratory course must also be dropped. With 203A or B, satisfies the University Core Curriculum Science Group I requirement in lieu of PHYS 101 or 103. Lab fee: \$25.

PHYS253B - College Physics Lab 253B-1 College Physics Laboratory. (Advanced University Core Curriculum course) [IAI Course: P1 900L] One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 203A,B respectively; if the corresponding lecture course is dropped, the laboratory course must also be dropped. With 203A or B, satisfies the University Core Curriculum Science Group I requirement in lieu of PHYS 101 or 103. Lab fee: \$25.

PHYS255A - University Physics Lab 255A-1 University Physics Laboratory. (Advanced University Core Curriculum course) [IAI Course: P2 900L] One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 205A,B respectively; if the corresponding lecture course is dropped, the laboratory course must also be dropped. With 205A or B, satisfies the University Core Curriculum Group I requirement in lieu of PHYS 101, 103. Lab fee: \$25.

PHYS255B - University Physics Lab 255B-1 University Physics Laboratory. (Advanced University Core Curriculum course) One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 205A,B respectively; if the corresponding lecture course is dropped, the laboratory course

must also be dropped. With 205A or B, satisfies the University Core Curriculum Group I requirement in lieu of PHYS 101, 103. Lab fee: \$25.

PHYS301 - Theoretical Methods 301-3 Theoretical Methods in Physics. Introduction to theoretical methods of general usefulness in intermediate and advanced undergraduate physics, with particular emphasis on applications of vector algebra and calculus, complex numbers, matrices, ordinary differential equations and Fourier series to selected topics in physics. Required of all physics majors prior to or concurrently taking 310 or 320. Prerequisite: PHYS 205A, MATH 250 with a grade of C or better.

PHYS302 - Astronomy-Honors 302-3 Astronomy - Honors. Current knowledge of the universe and the gathering of that knowledge. Includes properties of the solar system and theories of its origin, the structure and evolution of stars. Supplemented by occasional hours of evening observation. Prerequisite: one of PHYS 203A, 205A, plus MATH 111, or consent of instructor.

PHYS305 - Modern Physics 305-3 Modern Physics. (Advanced University Core Curriculum course) The physics of the twentieth century: special relativity (experimental basis; time dilation, length contraction, Lorentz transformations; addition of velocities; relativistic momentum, mass and energy). Quantum mechanics (wave-particle duality, early quantum theory, tunneling phenomena, the Schrodinger equation in one and in three dimensions). Applications of quantum theory to: atomic and molecular structure; lasers, condensed matter physics; nuclear and particle physics. Prerequisites: PHYS 205A and PHYS 205B with a grade of C or above, or PHYS 203A and PHYS 203B both with a grade of C or above.

PHYS310 - Mechanics 310-3 Classical Mechanics. Review of Newtonian mechanics of particles and rigid bodies, and Lagrangian and Hamiltonian dynamics. Prerequisite: PHYS 301 or MATH 305 or concurrent enrollment, PHYS 205A, and PHYS 205B with grade of C or better.

PHYS320 - Electricity & Magnetism I 320-3 Electricity and Magnetism I. The theory of electric and magnetic fields; electrostatic fields in vacuum and in material media, special methods for the solution of electrostatics problems, energy, and force relations in electrostatic fields; stationary electric fields in conducting media, electric currents, magnetic fields, magnetic properties of matter. Prerequisite: PHYS 301 or MATH 305 or concurrent enrollment, and PHYS 205A,B and MATH 251 with grade of C or better.

PHYS328 - Light 328-2 Light. Light propagation, reflection, refraction, interference, diffraction, polarization, and optical instruments. Prerequisite: PHYS 203B or 205B with grade of C or better.

PHYS345 - Thermodynamics/Stats Phys 345-3 Thermodynamics and Statistical Physics. Thermal behavior of macroscopic matter, the laws of thermodynamics; basis for thermodynamics in statistical mechanics; basic methods and applications of classical and quantum statistical mechanics. Elementary kinetic theory of matter. Prerequisite: PHYS 301, MATH 251 with grade of C or better.

PHYS355 - Modern Physics Lab 355-1 Modern Physics Laboratory. A laboratory class which meets for a two hour session once a week. The laboratory experiments include several of the seminal experimental discoveries that helped establish quantum theory (spectral lines, the charge to mass ratio for the electron, the photoelectric effect, the Franck-Hertz experiment, radioactivity, superconductivity, etc.). Prerequisites: PHYS 205A and PHYS 205B or PHYS 203A and PHYS 203B with a grade of C or better. Lab fee: \$25.

PHYS390 - Undergraduate Research 390-1 to 4 Undergraduate Research. An introduction to investigations in physics. Individual work under the supervision of a physics faculty member on a special topic in physics. Not for graduate credit. Special approval needed from the instructor.

PHYS420 - Electricity and Magnetism II 420-3 Electricity and Magnetism II. Induced electromotive force, quasisteady currents and fields, Maxwell's equations, electromagnetic waves and radiation, with applications. Prerequisite: PHYS 320 with grade of C or better.

PHYS424 - Electronics 424-4 Electronics for Scientists. Coordinated two-hour lecture and four-hour laboratory study of electronics. Emphasis is on overall modern electronics and its applications in the experimental research laboratory setting. Topics include DC and AC circuit theory, measurement techniques, semiconductor active devices, operational amplifiers and feedback, digital circuits, Boolean algebra, microprocessors and large scale integration, digital to analog/analog to digital conversion, and data acquisition. Prerequisite: PHYS 203B or 205B and MATH 111 with a grade of C or better.

PHYS425 - Solid State Physics 425-3 Solid State Physics I. Structure of a crystalline solid; lattice vibrations and thermal properties; electrons in metals; band theory; electrons and holes in semiconductors; opto-electronic phenomena in solids; dielectric and magnetic properties; superconductivity. Prerequisite: PHYS 310, 320, and 430 with grade of C or better.

PHYS428 - Modern Optics and Lasers 428-3 Modern Optics and Lasers. Properties of electromagnetic waves in space and media, polarization and interference phenomena and devices, electro- and magneto-optic effects, optical gain, and lasers. Prerequisite: PHYS 420 with grade of C or better.

PHYS430 - Quantum Mechanics I 430-3 Quantum Mechanics I. An introduction to quantum phenomena, wells, barriers, Hydrogenic atoms, angular momentum and identical particles. Prerequisite: PHYS 305, 310, and 320 with a grade of C or better. Prior or concurrent enrollment in PHYS 420 is desirable.

PHYS431 - Atomic Physics 431-3 Atomic and Molecular Physics I. Atomic spectra and structure; molecular spectra and structure. Prerequisite: PHYS 430 with a grade of C or better.

PHYS432 - Nuclear Physics 432-3 Nuclear Physics I. Basic nuclear properties and structure; radioactivity, nuclear excitation, and reactions, nuclear forces; fission and fusion. Prerequisite: PHYS 430 with grade of C or better.

PHYS440 - Quantum Mechanics II 440-3 Applications of Quantum Mechanics. Applications of quantum mechanics to include time-independent and time-dependent perturbation theory, variational methods, introduction to solid-state physics and materials. Prerequisite: PHYS 430 with grade of C or better.

PHYS445 - Thermodynamics/Stat Mech 445-3 Thermodynamics and Statistical Mechanics. Laws of thermodynamics; Principles and Applications of Classical and Quantum Statistical Mechanics; Introduction to Phase Transitions. Prerequisites: PHYS 305 and PHYS 301 both with a grade of C or better; MATH 251 with a grade of C or better.

PHYS450 - Advanced Lab 450-3 Advanced Laboratory Techniques. Introduces students to experimental research and encourages them to develop and carry out experiments. Prerequisite: PHYS 305 and PHYS 355 with a grade of C or better. Lab fee: \$50.

PHYS458 - Laser and Optics Lab 458-2 Laser and Optical Physics Laboratory. Properties of laser beams and resonators, fluorescence and two photon spectroscopy, diffraction, Fourier transformation and frequency filtering, electro- and magneto-optic modulation, fiber propagation and related experiments. Prerequisite: PHYS 428 with grade of C or better.

PHYS470 - Special Projects 470-1 to 3 Special Projects. Each student chooses or is assigned a definite investigative project or topic. Prerequisite: PHYS 310, 320 or consent of instructor.

PHYS475 - Special Topics 475-3 Special Topics in Physics. These courses are advanced special topics in physics designed to enable undergraduate and graduate students to become well-versed in a particular and current research area of physics with the intention of preparing them for future research and/or industrial applications. They are offered as the need arises and interest and time permit. Students are required to give presentations. Special approval needed from the instructor.

PHYS476B - Biological Physics 476B-3 Introduction to Biological Physics. This course provides an introduction to how physics principles and techniques are applied to study and describe complex and emergent processes found at the biological and biomolecular level. This course combines several topics not usually covered in standard undergraduate science courses to qualify and quantify cell structure, mechanics, dynamics, self-assembly, and biological functionality. Prerequisites: Two semesters of an introductory physics sequence (PHYS 203A,B or PHYS 205A,B) with minimum grades of C, MATH 150 or concurrent enrollment.

PHYS476C - Computational Physics 476C-3 Introduction to Computational Physics. This course provides foundational knowledge in the usage of computers for solving natural problems in different types of physical systems. The class will give a thorough understanding of various numerical techniques such as interpolating/extrapolating data, integrating ordinary and partial differential equations, and solving linear algebra problems. Students will be guided to write programs for solving several applied physics problems in classical and modern physics. A brief survey of High Performance Computing will also be presented giving students a working knowledge of scientific computing. Prerequisites: Two semesters

of an introductory physics sequence (PHYS 203A,B or PHYS 205A,B), with minimum grades of C and concurrent enrollment in PHYS 305. PHYS 301, PHYS 310 and PHYS 320 are not required but recommended.

PHYS476M - Materials Physics 476M-3 Introduction to Materials Science and NanoPhysics. This course will serve as an introductory course in Materials Science and Nanoscale Physics. Topics to be covered include: The need for studying Materials Science, classification of materials, advanced concepts in materials manufacturing, modern materials, nanoscale materials, electrical, thermal, magnetic and optical properties of materials, tailoring materials for application development, Techniques of Materials characterization, Nanomaterials and Nanotechnology, and Societal Impact. Prerequisites: Two semesters of an introductory physics sequence (PHYS 203A,B or PHYS 205A,B), with minimum grades of C, MATH 150 or concurrent enrollment.

PHYS476Q - Quantum Entanglement 476Q-3 Quantum Entanglement. This course provides an introduction to the theory of quantum entanglement and its use in quantum information science, especially for the task of communication. Topics include quantum teleportation, entanglement measures, and nonlocality. Prerequisite: MATH 221 with a grade of C or better.

PHYS490 - Advanced Undergrad Research 490-1 to 4 Advanced Undergraduate Research. Advanced undergraduate research under the supervision of a physics faculty member. A presentation of the results will be made at the end of the term. Not for graduate credit. Prerequisite: PHYS 310, 320 or consent of instructor and undergraduate advisor.

PHYS500A - Mathematical Methods 500A-3 Mathematical Methods in Physics. Vector spaces and operators in physics. Hilbert spaces and complete orthonormal sets of functions. Elements and applications of the theory of analytic functions. Methods for the solution of partial differential equations of physics.

PHYS500B - Mathematical Methods 500B-3 Mathematical Methods in Physics. Vector spaces and operators in physics. Hilbert spaces and complete orthonormal sets of functions. Elements and applications of the theory of analytic functions. Methods for the solution of partial differential equations of physics.

PHYS510 - Classical Mechanics 510-3 Classical Mechanics. Generalized coordinates and forces. Lagrangian, Hamiltonian, and variational formulations of mechanics. Noether's Theorem. Central forces, oscillations.

PHYS520A - Electromagnetic Theory 520A-3 Electromagnetic Theory. Determination of static, electrostatic, and magnetostatic fields. Microscopic and macroscopic theory of insulators and conductors. Maxwell's equations; radiation, propagation and scattering of electromagnetic waves. Electrodynamics and special theory of relativity. Selected topics.

PHYS520B - Electromagnetic Theory 520B-3 Electromagnetic Theory. Determination of static, electrostatic, and magnetostatic fields. Microscopic and macroscopic theory of insulators and conductors. Maxwell's equations; radiation, propagation and scattering of electromagnetic waves. Electrodynamics and special theory of relativity. Selected topics.

PHYS530A - Quantum Mechanics II 530A-3 Quantum Mechanics II. Basic principles; the harmonic oscillator and the hydrogen atom; scattering; approximation and perturbation methods; spin, statistics.

PHYS530B - Quantum Mechanics II 530B-3 Quantum Mechanics II. Basic principles; the harmonic oscillator and the hydrogen atom; scattering; approximation and perturbation methods; spin, statistics.

PHYS531A - Advanced Quantum Mechanics 531A-3 Advanced Quantum Mechanics. Quantum theory of radiation; applications of field theory to elementary particles; covariant quantum electrodynamics; renormalization; special topics. Content varies somewhat with instructor. Prerequisite: PHYS 530. Special approval needed.

PHYS531B - Advanced Quantum Mechanics 531B-3 Advanced Quantum Mechanics. Quantum theory of radiation; applications of field theory to elementary particles; covariant quantum electrodynamics;

renormalization; special topics. Content varies somewhat with instructor. Prerequisite: PHYS 530. Special approval needed.

PHYS535A - Atomic/Molecular Physics II 535A-3 Atomic and Molecular Physics II. Recent experimental methods in atomic and molecular spectroscopy with applications. Detailed quantum mechanical and group theoretical treatment of atomic and molecular systems. Reactions between atomic systems. Special approval needed from the instructor.

PHYS535B - Atomic/Molecular Physics II 535B-3 Atomic and Molecular Physics II. Recent experimental methods in atomic and molecular spectroscopy with applications. Detailed quantum mechanical and group theoretical treatment of atomic and molecular systems. Reactions between atomic systems. Special approval needed from the instructor.

PHYS545A - Statistical Mechanics II 545A-3 Statistical Mechanics II. Principles of classical and quantum equilibrium statistics; fluctuation phenomena; special topics in equilibrium and non-equilibrium phenomena.

PHYS545B - Statistical Mechanics II 545B-3 Statistical Mechanics II. Principles of classical and quantum equilibrium statistics; fluctuation phenomena; special topics in equilibrium and non-equilibrium phenomena.

PHYS550 - Computational Physics 550-3 Computational Physics. Using modern computers to solve physics problems. Integration of ordinary and partial differential equations, interpolation and extrapolation, finite element analysis, linear and nonlinear equations, eigensystems, optimization, root finding, Monte Carlo simulations, etc.

PHYS560A - Nuclear Physics II 560A-3 Nuclear Physics II. Fundamental properties and systematics of nuclei, scattering theory, nuclear two-body problem, nuclear models, nuclear many-body problem, electromagnetic properties of nuclei, radioactivity, nuclear reactions. Prerequisite: PHYS 530. Special approval needed from the instructor.

PHYS560B - Nuclear Physics II 560B-3 Nuclear Physics II. Fundamental properties and systematics of nuclei, scattering theory, nuclear two-body problem, nuclear models, nuclear many-body problem, electromagnetic properties of nuclei, radioactivity, nuclear reactions. Prerequisite: PHYS 530. Special approval needed from the instructor.

PHYS565A - Solid State Physics II 565A-3 Solid State Physics II. Fundamental concepts in solid state physics. Lattice vibrations, band theory of solids, the Fermi surface, dynamics of electrons. Transport, cohesive, optical, magnetic and other properties of solids. Special approval needed from the instructor.

PHYS565B - Solid State Physics II 565B-3 Solid State Physics II. Fundamental concepts in solid state physics. Lattice vibrations, band theory of solids, the Fermi surface, dynamics of electrons. Transport, cohesive, optical, magnetic and other properties of solids. Special approval needed from the instructor.

PHYS570 - Special Projects in Physics 570-1 to 36 Special Projects in Physics. Each student works on a definite investigative topic under the supervision of a faculty sponsor. The projects are taken from the current research in the department. Resourcefulness and initiative are required. Graded S/U only. Special approval needed from the instructor.

PHYS571A - XRay Diffn/Electrn Microscopy 571A-3 X-Ray Diffraction and Electron Microscopy. (See ME 504) Special approval needed from the instructor.

PHYS571B - XRay Diffn/Electron Microscopy 571B-3 X-Ray Diffraction and Electron Microscopy. (See ME 504) Special approval needed from the instructor.

PHYS575 - Selected Topics in Physics 575-1 to 12 (1 to 4 per topic for a maximum of three topics) Special Topics in Physics. The courses reflect special research interests of the faculty and current developments in physics. They are offered as the need arises and interest and time permit. Students are required to give presentations. Special approval needed from the instructor.

PHYS581 - Graduate Seminar 581-1 to 3 (1,1,1) Graduate Seminar. Lectures on special topics by students, faculty, or invited scholars; participation is required of all graduate students. For credit

each student may present a seminar in the form of a lecture on a theoretical or experimental topic, a demonstration experiment or apparatus critique. Graded S/U only.

PHYS598 - Research 598-1 to 50 (1 to 12 per semester) Research. Maximum credit 50 hours. Graded S/U only. Special approval needed from the instructor.

PHYS599 - Thesis 599-1 to 6 Thesis.

PHYS600 - Dissertation 600-1 to 30 Dissertation. Minimum 24 credit hours required for Ph.D. degree. Special approval needed from the instructor.

PHYS601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

PHYS699 - Postdoctoral Research 699-1 Postdoctoral Research. One credit hour per semester. Concurrent enrollment in any other course is not permitted. Must be a Postdoctoral Fellow.

Physics Faculty

Ali, Naushad, Professor and Chair, Ph.D., University of Alberta, 1984.

Byrd, Mark, Professor, University of Texas, Austin, 1999.

Chitambar, Eric, Associate Professor, Ph.D., University of Michigan, Ann Arbor, 2010.

Cutnell, John D., Professor, Emeritus, Ph.D., University of Wisconsin, 1967.

Gruber, Bruno J., Professor, Emeritus, Ph.D., University of Vienna, Austria, 1962.

Henneberger, Walter C., Professor, Emeritus, Ph.D., Gottingen University, Germany, 1959.

Jayasekera, Thushari, Assistant Professor, Ph.D., University of Oklahoma, Norman, 1999.

Johnson, Kenneth W., Professor, Emeritus, Ph.D., Ohio State University, 1967.

Malhotra, Vivak, Professor, Emeritus, Ph.D., Indian Institute of Technology, Kanpur, 1978.

Malik, F. Bary, Professor, Emeritus, Ph.D., Gottingen University, West Germany, 1958.

Masden, J. Thomas, Associate Professor, Emeritus, Ph.D., Purdue University, 1983.

Mazumdar, Dipanjan, Assistant Professor, Ph.D., Brown University, 2008.

Migone, Aldo, Professor, Emeritus, Ph.D., Pennsylvania State University, 1984.

Sanders, Frank C., Associate Professor, Emeritus, Ph.D., University of Texas, 1968.

Saporoschenko, Mykola, Professor, Emeritus, Ph.D., Washington University, 1958.

Silbert, Leonardo, Associate Professor, Ph.D., University of Cambridge, England, 1998.

Talapatra, Saikat, Professor, Ph.D., Southern Illinois University, 2002.

Plant Biology

Plant Biology is the study of all aspects of plants including their diversity, anatomy, physiology, biochemistry, genetics, evolution, conservation, and ecology. The need for botanical expertise is rapidly increasing in response to habitat loss, species extinctions, invasive species, and global climate change. Additionally, plants provide us with food, shelter, medicines, clothing, and many other products. Thus the demand for plant biologists will never diminish. A degree in Plant Biology will provide a strong foundation for a wide range of careers in plant biology, agriculture, conservation, environmental sciences, health-related fields, and other life science disciplines.

The Department of Plant Biology is one of only two such programs in Illinois. Our undergraduate curriculum has a number of features that insure our graduates' success 1) a flexible undergraduate curriculum that includes both B.A. and B.S. degrees, 2) practical experience and training in modern skills and research techniques, 3) a high degree of personalized faculty mentoring, 4) an atmosphere where

undergraduate, graduate students, and faculty interact, and 5) ample opportunities for undergraduates to participate in outreach and service.

Bachelor of Arts in Plant Biology Degree, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
College of Science Academic Requirements	7-9
Biological Sciences - completed with major Mathematics - MATH 106 or MATH 108 and MATH 109; or MATH 111 (3 hours included in the UCC Mathematics hours)	1-3
Physical Sciences - completed with major Supportive Skills - CS 200B or CS 201 or CS 202; ENGL 290 or ENGL 291; MATH 282; or any two-semester foreign language sequence	6
Plant Biology Major Requirements	55-57
BIOL 307	3
PLB 200, PLB 300, PLB 301I, PLB 320, PLB 360, PLB 408, PLB 480 (Three hours included in the UCC Life Science hours)	23
CHEM 200 or CHEM 200H, CHEM 201, CHEM 202 or CHEM 202H (Three hours included in the UCC Physical Science hours)	2
One additional semester of physical science with laboratory at the 200-level or above from CHEM, GEOG, or PHYS	3-5
Disciplinary Electives chosen in consultation with the student's undergraduate faculty advisor	24
Options available are: General Plant Biology (default if Conservation Biology option is not chosen)	
Conservation Biology	
PLB 451	3
PLB 493A, B, or C for at least 1 credit	1
ZOOL 410	3
At least 13 hours chosen from PLB 444; FOR 202, FOR 341, FOR 351, FOR 413, FOR 415, FOR 423,	13

Degree Requirements	Credit Hours
FOR 451; GEOG 401, GEOG 412, GEOG 428, GEOG 471; ZOOL 444	
Additional PLB Electives	4
Free Electives	15-20
Total	120

1 The 39-hour requirement may be reduced by taking College of Science or major requirements that are approved advanced University Core Curriculum courses.

Bachelor of Science in Plant Biology Degree, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
College of Science Academic Requirements	7-9
Biological Sciences - completed with major	
Mathematics - MATH 106 or MATH 108 and MATH 109; or MATH 111 (3 hours included in the UCC Mathematics hours)	1-3
Physical Sciences - completed with major	
Supportive Skills - CS 200B or CS 201 or CS 202	
ENGL 290 or ENGL 291; MATH 282; or any two-semester sequence of a foreign language.	6
Plant Biology Major Requirements	61-63
BIOL 211, BIOL 212, BIOL 213	
(3 hours included in the UCC Life Science hours)	9
BIOL 304, BIOL 305, BIOL 306, BIOL 307 (three of the four)	9
PLB 300, PLB 320, PLB 360, PLB 408, PLB 480	19
CHEM 200 or CHEM 200H, CHEM 201, CHEM 202 or CHEM 202H	
(Three hours included in the UCC Physical Science hours)	2

Degree Requirements	Credit Hours
Three additional semesters of laboratory at the 200-level or above from Chemistry and/or Physics	12-15
MATH 141	4
Disciplinary Electives chosen in consultation with the student's undergraduate faculty advisor	16
Options available are:	
General Plant Biology	
16 credit hours and at least one course from each of the specializations listed below:	
Ecology Specialization	
BIOL 304 and BIOL 307 are required from the list above	
At least 12 credit hours chosen from: PLB 416, PLB 435, PLB 440, PLB 443, PLB 444, PLB 445, PLB 451, PLB 452	12
Additional PLB electives.	4
Molecular and Biochemical Physiology	
BIOL 305 and BIOL 306 are required from the list above.	
PLB 419	3
At least 9 credit hours chosen from PLB 400, PLB 425, PLB 427, PLB 438, PLB 471, PLB 475, PLB 476	9
Systematics and Biodiversity Specialization	
BIOL 304 and BIOL 307 are required from the list above.	
At least 12 credit hours chosen from PLB 400, PLB 401, PLB 402, PLB 415, PLB 438, PLB 451, ZOOL 405	12
Free Electives	10-14
Total	121

1 The 39-hour requirement may be reduced by taking College of Science or major requirements that are approved advanced University Core Curriculum courses.

General Minor

A general minor in plant biology consists of a minimum of 16 semester hours, selected from any plant biology offerings except University Core Curriculum courses (PLB 115, PLB 117, PLB 301I and PLB 303I) and PLB 360, PLB 390, PLB 490, or PLB 492.

Tracked Minors

A. *Plant Biology, with emphasis in Plant Biodiversity*: Consists of 16 credit hours selected from the courses listed below:

PLB 300, PLB 304, PLB 451, PLB 400, PLB 415, PLB 406.

B. *Plant Biology, with emphasis in Plant Ecology*: Consists of 16 credit hours taken from the list of courses below.

BIOL 307, PLB 304, any three of the following courses:

PLB 435, PLB 440, PLB 443, PLB 444, PLB 445, or PLB 452.

C. *Plant Biology, with emphasis in Plant Biotechnology*: Consists of 16 credit hours from the following courses:

BIOL 305, BIOL 306, PLB 320, PLB 419, PLB 425, PLB 427, PLB 433, or PLB 471.

Plant Biology Courses

PLB115 - General Biology 115-3 General Biology. (University Core Curriculum) (Same as ZOOL 115) [IAI Course: L1 900L] Introduction to fundamental biological concepts for non-life science majors interested in learning about interrelationships of human, plant and animal communities. Integrated lecture and laboratory cover topics that include structure and function of living systems, reproduction and inheritance, evolution, biological diversity and environmental biology. Laboratory applies scientific methods to the study of living systems. Lab fee: \$15.

PLB117 - Intro to Ethnobotany 117-3 Introduction to Ethnobotany and Economic Botany. (University Core Curriculum) [IAI Course: L1 901L] A multidisciplinary approach to understanding the relationships between plants and humans: basic botanical principles (cell structure, morphology, anatomy, physiology, genetics, systematics, diversity and ecology); historical and modern uses of plant (fibers, building materials, crops, beverages, medicines), poisonous plants, an Observational and experimental labs reinforce lecture topics. Lab fee: \$15.

PLB200 - General Plant Biology 200-4 General Plant Biology. (Advanced University Core Curriculum course) An introduction to Plant Biology. Emphasis is placed on structure and reproduction, embryo development, and vital developmental processes needed for plant survival, such as photosynthesis, respiration, water transport and nutrient assimilation. Other topics include cell division, basic Mendelian genetics, DNA, RNA, protein synthesis, taxonomy, evolution, ecology, and conservation. The course also includes a brief overview of medicinal plants and their biologically active compounds. Satisfies University Core Curriculum Science Group II requirement in lieu of PLB 115 or ZOOL 115. Lab fee: \$15.

PLB300 - Plant Diversity 300-4 Diversity of Plants, Algae, and Fungi. This course surveys the history and diversity of algae, land plants, and fungi-branches of the tree of life that are of immense importance both to the ecosystem and to human interests. Emphasis is on evolution, ecology, symbiotic relationships, life cycles, and adaptive morphology. Three lectures and one 2-hour laboratory per week. Prerequisite: either BIOL 213 or PLB 200 with a grade of C or better. Lab fee: \$50.

PLB301I - Environmental Issues 301I-3 Environmental Issues. (University Core Curriculum) Fundamental biological and ecological processes important in the individual, population and community life of organisms integrating with the philosophical and ethical relationships of the contemporary,

domestically diverse human society are examined. Emphasis is placed on a pragmatic understanding of environmental issues. Lab fee: \$15.

PLB303I - Evolution & Society 303I-3 Evolution and Society. (University Core Curriculum: Students with a catalog year prior to Summer, 2012 only) An introduction to the basics of biological evolution and the effect of biological evolution on society. Historical and modern interpretations of biological evolution on the human experience will be developed. This will include legal, political, religious, scientific, racist, sexist, philosophical and educational aspects. Topics will be covered via discussions, presentations, papers and debates. Prerequisite: strongly recommend completion of University Core Curriculum Science requirements. Lab fee: \$15.

PLB317 - Intro to Medical Botany 317-4 Introduction to Medical Botany. A survey of plants affecting human health and how they are used historically and in modern times, with emphasis on the biologically active constituents. Laboratory experiments will introduce students to techniques in production, isolation, chemical analysis and biological testing of medical compounds from plants. Two lectures and 4 hours of laboratory per week. Prerequisites: BIOL 200A and BIOL 200B or BIOL 211, BIOL 212, and BIOL 213, CHEM 140A or CHEM 200 and CHEM 201. Lab fee: \$25.

PLB320 - Plant Physiology 320-4 Elements of Plant Physiology. The processes used by plants to meet their basic needs and to control growth and development. Three lectures and two laboratory hours per week. Prerequisite: BIOL 211 and BIOL 213 or PLB 200; CHEM 200 and CHEM 201 with grades of C or better. Lab fee: \$50.

PLB330 - Forensic Botany 330-3 Forensic Botany. Exploration of the use of botanical evidence in forensic investigations. Students will learn how botanical evidence is identified, collected, and analyzed in criminal cases. How 'real' are Hollywood forensics cases that use plants? Students will read critique legal case studies and the current scientific literature. There will be a field trip to the State Crime Lab. Prerequisite: At least one of the following life science courses with lab: BIOL 200A, BIOL 200B, BIOL 211, BIOL 212, BIOL 213, PLB 200, PLB 117, PLB 115, or ZOOL 115. Field trip fee: \$15.

PLB351 - Ecological Methods 351-3 Ecological Methods. (Same as ZOOL 351) Basic ecological field techniques for analysis of community structure and functional relationships. Two 4-hour laboratories per week. Prerequisite: BIOL 307. Laboratory/field trip fee: \$25.

PLB360 - Introductory Biostatistics 360-3 Introductory Biostatistics. (Same as ZOOL 360) Introduction to basic statistical concepts and methods as applied to biological data. Includes descriptive techniques such as measures of central tendency, variability, hypothesis testing, analysis of variance and simple linear regression and correlation. Analysis of computer generated output and report writing required. This course does not fulfill the College of Science Biological Sciences requirement. Prerequisite: MATH 108.

PLB380 - Sophomore Seminar 380-2 Sophomore Seminar. This course provides professional development, career guidance, discussion of current topics and research, and development of oral and written communication skills. The course will consist of a variety of activities, discussions, and guest speakers that will cover a broad array of science-related career paths (graduate school, science education, government agencies, and biotech/private industry), orientation to research opportunities in the Plant Biology Department, development of a polished CV/resume for graduate school or a job application, development of written and oral communication skills, introduction to reading primary research literature.

PLB390 - Readings in Plant Biology 390-1 to 3 Readings in Plant Biology. Individually assigned readings in botanical literature. Every semester. Special approval needed from the departmental chair.

PLB400 - Plant Anatomy 400-4 Plant Anatomy. This course is an introduction to the differentiation, diversification and structure of plant tissues and organs, with emphasis on the organization of seed plants. Laboratory will include instruction in the techniques of microscopy used in the study of plant structure. Two lectures and two laboratories per week. Prerequisite: BIOL 213 or PLB 200 with grades of C or better. Lab fee: \$50.

PLB401 - Curation of Collections 401-2 Curation of Collections. This course will be an introduction to the curation of biological collections and strongly involve experiential learning through participatory activities with collections. This will involve an overview of museums, collection procedures, and the long-

term features of high quality curation of specimens and will examine how a broad range of organisms is curated. Lab/Field trip fee: \$50.

PLB402 - Collections Management 402-2 Collections Management and Research Design. This course will build on the knowledge of collection curation. Research design as it specifically relates to the fields of natural history will be developed. Students will learn to utilize existing organismal collections and build their own research collections through directed research design. Students will be expected to write their own research proposal and to review other students' proposals. Prerequisite: PLB 401.

PLB408 - Plant Systematics 408-4 Elements of Plant Systematics. This course covers the principles of plant classification including history, nomenclature, specimen collection and preservation, current systematic methodologies, and a survey of major plant families. Two lectures and four hours of lab per week. Prerequisites: BIOL 213 or PLB 200 with grades of C or better. Lab fee: \$50.

PLB415 - Plant Morphology 415-5 Morphology of Vascular Plants. This course examines the external form, internal structure, and relationships of vascular plants. Three lectures and two laboratories per week. Prerequisite: BIOL 213 or PLB 200 with a grade of C or better (PLB 300 and PLB 400 recommended). Lab fee: \$40.

PLB416 - Limnology 416-3 Limnology. (Same as ZOOL 415) Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures and one 4-hour laboratory alternate weeks. Prerequisite: BIOL 307 with a grade of C or better. Laboratory/Field Trip Fee: \$15.

PLB419 - Plant Molecular Biology 419-3 Plant Molecular Biology. (Same as PSAS 419, CSEM 419) A survey of molecular phenomena unique to plant systems. Topics will include: genome organization and synteny between plant genomes, transcriptional and post-transcriptional control of gene expression, signal transduction, epigenetics, plant-pathogen interactions and responses to biotic- and abiotic-stresses. Prerequisite: BIOL 305 or CSEM 305. Restricted to junior standing.

PLB425 - Environmental Plant Phys 425-4 Environmental Physiology of Plants. (Same as CSEM 425; Same as PSAS 425) The environmental physiology of plants focuses on the 1) influence of abiotic factors (e.g., light, water, temperature, nutrients, pollutants) on growth, development, and yield; 2) mechanisms by which plants respond to these abiotic factors; 3) use of biotechnology to increase abiotic stress tolerance in model and crop plants. Prerequisite: PLB 320 or CSEM 409. A \$35 laboratory fee will be assessed.

PLB427 - Plant Biochemistry 427-5 Plant Biochemistry. (Same as CSEM 427 and PSAS 427) Exploration of fundamental biochemical pathways in plants with an emphasis upon carbon and nitrogen metabolism. Prerequisite: PLB 320 or consent of instructor. Lab fee: \$35.

PLB433 - Intro to Ag Biotechnology 433-3 to 7 Introduction to Agricultural Biotechnology. (Same as AGSE 433, ANS 433, CSEM 433, HORT 433, PSAS 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer, and expression will be derived.

PLB435 - Plant-Insect Interactions 435-3 Plant-Insect Interactions. (Same as ZOOL 435) Plants and insects have played major roles influencing each other's evolutionary diversification. This course will be an evolutionary and ecological examination of the interactions between plants and insects. Topics will include herbivory, pollination relationships, ant-plant mutualisms, host plant choice, seed and fruit dispersal, coevolution/cospeciation, and chemical ecology. Prerequisite: BIOL 307 with a grade of C or better or equivalent.

PLB438 - Molecular Genetics Lab 438-3 Plant and Animal Molecular Genetics Laboratory. (Same as AGSE 438, CSEM 438, PSAS 438, ZOOL 438) Arabidopsis and Drosophila model organisms, lab-based training in laboratory safety, reagent preparation, phenotype analysis, genetics, DNA and RNA analysis, PCR, cDNA construction, cloning and sequencing of genes. Includes plant and bacterial transformation, and a population level analysis of genetic variation using RAPD markers in grasses and Alu insertion in

humans. Two 2-hr labs and one 1-hr lecture per week. Prerequisite: BIOL 305 or equivalent or consent of instructor. Lab fee: \$30.

PLB440 - Grassland Ecology 440-3 Grassland Ecology. This course examines grassland structure and function in relation to various biotic and abiotic factors. Field trips will visit local grasslands. Two lectures and one 4-hour lab per week. Prerequisite: BIOL 307 or consent of instructor. Lab fee: \$50.

PLB443 - Restoration Ecology 443-3 Restoration Ecology. (Same as ZOOL 443) Ecological restoration tests current understanding of ecosystem assembly and function. This course applies ecological theory to restoration, with an emphasis on factors influencing plant community assembly and evaluating restoration success. Two lectures a week and one four-hour lab alternate weeks. Prerequisite: BIOL 307.

PLB444 - Ecological Analysis Communities 444-4 Ecological Analysis of Communities. (Same as ZOOL 444) Includes concepts and methods pertaining to the analysis of ecological data. Approaches will include a variety of methods for analyzing multivariate ecology, diversity, pattern, and spatial data. Laboratory will include the computer application of these concepts and methods to field situations. Two lectures and one 4 hour lab per week. Prerequisite: PLB/ZOOL 360, BIOL 307. Lab fee: \$15.

PLB445 - Wetland Ecology & Mgmt 445-4 Wetland Ecology and Management. (Same as ZOOL 445) This course provides students with experience in wetland ecology and management with an emphasis on wetland functioning, field sampling, and identification of common wetland plants. Prerequisite: BIOL 307 with a grade of C or better. Two lectures and one 4-hour lab per week. Lab fee: \$25.

PLB451 - Flora of Southern Illinois 451-3 Flora of Southern Illinois. Exposure to the major upland and lowland communities of southern Illinois with an emphasis on the identification, distribution and ecology of the natural and introduced floristic components. This is a field-based course wherein the students travel to local areas for plant identification. Each week, 4-8 hours per weekly session is spent in field work and travel to specific field sites is required via a university vehicle. Prerequisite: PLB 408 with a grade of C or better or consent of instructor. Field Trip Fee not to exceed \$160.

PLB452 - Plant Population Ecology 452-4 Plant Population Ecology. This course covers principles and research techniques of plant population ecology including the spatial, age, size and genetic structures of plant populations. The origin of these different aspects of population structure, their influences upon each other and their temporal dynamics are also examined. Two lectures and one 4-hour lab per week. Prerequisite: BIOL 307 or consent of instructor. Lab fee: \$35.

PLB471 - Intro to Systems Biology 471-3 Introduction to Systems Biology. (Same as ZOOL 472) The bioinformatic analysis of large genomic and post-genomic data sets. Integration of gene regulation, protein interaction, metabolite and hormonal signaling provides an understanding of basic cellular circuitry networks. Examine redundancy, robustness and decision making in biological systems. Lab includes databases, tools, and manipulation of large data sets. Prerequisite: BIOL 305 or CS 330. Lab fee: \$15.

PLB475 - Advanced Cell Biology 475-3 Advanced Cell Biology. Cell structure at molecular and cytological levels. Includes discussions of research methods, plasma membrane, cell exterior and recognition, the endomembrane system and related organelles, self-replicating organelles, the cytoskeleton, nuclear structure and function in cell replication, cell differentiation and response, and eukaryotic cell evolution. Prerequisite: BIOL 306 or equivalent.

PLB476 - Advanced Cell Biology Lab 476-2 Advanced Cell Biology Laboratory. Laboratory course to accompany Plant Biology 475. Light and electron microscopy, cell culturing, biochemical methods, and experimental protocols are used to study the structure of cell membranes, intracellular organelles, including the Golgi apparatus, ER, mitochondria, plastids, lysosomes, the cytoskeleton, and nucleus. Prerequisite: PLB 475 or concurrent enrollment.

PLB480 - Senior Seminar 480-1 Senior Seminar. Reading, writings, discussions and presentations of current research topics in plant biology. Not for graduate credit. Restricted to senior standing or consent of instructor.

PLB490 - Food Webs and Ecosystems 490-3 Energetics, Food Webs, and Ecosystems. (Same as ZOOL 490) This course places conservation of particular species into the context of community and ecosystem management. Approaches to quantifying energy needs of individual species will be

extended to models of trophic networks among multiple species. Food web structure and function, species interactions, and resilience to species loss species invasions, and environmental changes will be examined in light of landscape processes. Prerequisite: BIOL 307 or consent of instructor.

PLB492 - Honors in Plant Biology 492-2 to 6 Honors in Plant Biology. Individual research problems available to qualified juniors and seniors. Special approval needed from the department chair.

PLB493A - Reseach Topics PI Biol-Ecology 493A-1 to 4 Research Topics in Plant Biology-Ecology. Individual laboratory or field research under supervised direction. Does not count for thesis (PLB 599) or dissertation (PLB 600) credit. Special approval needed from the departmental chair.

PLB493B - Res Topics PI Biol-Systematics 493B-1 to 4 Research Topics in Plant Biology-Systematics. Individual laboratory or field research under supervised direction. Does not count for thesis (PLB 599) or dissertation (PLB 600) credit. Special approval needed from the departmental chair.

PLB493C - Res Top PI Biol-Physlgy/Mol Bi 493C-1 to 4 Research Topics in Plant Biology-Physiology/Molecular Biology. Individual laboratory or field research under supervised direction. Does not count for thesis (PLB 599) or dissertation (PLB 600) credit. Special approval needed from the departmental chair.

PLB501A - Trans Electron Microscope 501A-2 Research Transmission Electron Microscopy. (See SCI 501A)

PLB501B - Trans Electron Micro-Lab 501B-2 Research Transmission Electron Microscopy. (See SCI 501B)

PLB502A - Scanning Electron Microscopy 502A-2 Research Scanning Electron Microscopy. (See SCI 502A)

PLB502B - Scanning Electron Microscop Lab 502B-2 Research Scanning Electron Microscopy Lab. (See SCI 502B)

PLB520 - Plant Growth & Development 520-3 Plant Growth and Development. (Same as PSAS 520) Physiological control of developmental processes. Emphasis on exogenous growth-regulating compounds and their behavior in plants. Prerequisite: PLB 320 or consent of instructor.

PLB524 - Gene Regulatory Networks 524-3 Gene Regulatory Networks. (Same as PSAS 524) An examination of the integration of genes into networks including developmental, abiotic stress response, metabolic and photoreceptor gene regulatory networks. Includes motif discovery, cis-regulatory elements, discussion of transcription factor families, RNA interference, network theory, feedback loops, cytoplasmic inheritance, maternal effect, post-transcriptional and post-translational regulation. Includes 2 lectures and a 2 hr computational bioinformatics lab per week. Prerequisite: PLB 471 or permission of instructor.

PLB525 - Cell Biology Research Techniqs 525-2 to 16 (2 to 4, 2 to 4, 2 to 4, 2 to 4) Cell Biology Research Techniques. A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project. (a) Quantitative Cytology. (b) Immuno-Labeling and Qualitative Histochemistry. (c) Deep Etching Techniques in Electron Microscopy. (d) Cell Fractionation and Biochemical Techniques. Course fee: \$50.

PLB525A - Cell Biology Research Tech 525A-2 to 16 (2 to 4, 2 to 4, 2 to 4, 2 to 4) Cell Biology Research Techniques-Quantitative Cytology. A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project.

PLB525B - Immuno-Label & Histochem 525B-2 to 16 (2 to 4, 2 to 4, 2 to 4, 2 to 4) Cell Biology Research Techniques-Immuno-Labeling and Qualitative Histochemistry. A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project.

PLB525C - Etching Tech Elect Micro 525C-2 to 16 (2 to 4, 2 to 4, 2 to 4, 2 to 4) Cell Biology Research Techniques-Deep Etching Techniques in Electron Microscopy. A special techniques course designed

for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project.

PLB525D - Cell Fraction & Biochem Tech 525D-2 to 16 (2 to 4, 2 to 4, 2 to 4, 2 to 4) Cell Biology Research Techniques-Cell Fractionation and Biochemical Techniques. A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project.

PLB530 - Plant Ecophysiology 530-3 Plant Ecophysiology (Same as PSAS 530) A study of the physiological processes that influence the growth, reproduction, adaptation, and geographic distribution of plants. The ecophysiology of plant stress and plant interactions. Prerequisite: PLB 320 or CSEM 409; BIOL 307.

PLB535 - Energetic Aquatic Ecosystems 535-2 Energetic Aquatic Ecosystems. Special approval needed from the instructor.

PLB545 - Ecosystem Ecology 545-3 Ecosystem Ecology. (Same as ZOOL 545) Fundamentals of and human modification to atmospheric chemistry and cycling of major nutrients in terrestrial ecosystems are covered in the context of global change. Laboratory exercises provide methodology and analytical approaches to studying ecosystem structure and function. Two lectures a week and one four-hour lab alternate weeks.

PLB546 - Nutrient Cycling Methods 546-2 Nutrient Cycling Methods. Research in ecosystem ecology requires a basic understanding of biochemistry. Analytical methodology used to study pools and transformations of major nutrients in terrestrial ecosystems, applicable to freshwater systems, will be the focus of this laboratory course. Three hour laboratory every other week. Prerequisite: PLB 545 or concurrent enrollment. Course fee: \$30.

PLB547 - Tropical Studies Costa Rica 547-3 to 8 Tropical Studies in Costa Rica. Credit for field courses taken under the jurisdiction of the Organization for Tropical Studies in Costa Rica. Courses and credits will vary. Prerequisite: approval of OTS Advisory Committee at Southern Illinois University Carbondale.

PLB554 - Evolution Seminar 554-1 to 4 (1,1,1,1) Evolution Seminar. (Same as ANTH 554, MBMB 554) Advanced topics in evolutionary biology including genetics & development, evolutionary ecology, phylogeny, paleontology, biogeography, population genetics, molecular ecology, speciation, molecular evolution, and macroevolution. Topics will vary each semester. Seminar format group discussions and student presentations. Graded S/U. Special approval needed from the instructor.

PLB556 - Phylogenetics 556-3 Phylogenetics. (Same as ANTH 556, MBMB 556, ZOOL 556) An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypothesis. Special approval needed from the instructor.

PLB557 - Biostatistics 557-4 Biostatistics. (Same as ZOOL 557) Basic biostatistical procedures used by researchers in life sciences and related fields. Topics include descriptive statistics, probability and distributions, statistical models, likelihood methods, experimental design, analysis of variance, regression, correlation, and the use of statistical software.

PLB558 - Advanced Biostatistics 558-4 Advanced Biostatistics. (Same as ZOOL 558) Advanced biostatistical procedures used by researchers in life sciences and related fields. Topics include multiple and logistic regression, randomization tests, jackknife and bootstrap. Mantel tests, BACI designs, MANOVA, repeated measures analysis, and the use of statistical software. Prerequisite: PLB 557 or equivalent, ZOOL 557.

PLB570 - Grad Readings Plant Biology 570-2 to 3 Graduate Readings in Plant Biology. A course of individually assigned readings in botanical literature. Every semester. Special approval needed from the instructor. Graded S/U only.

PLB571 - Genomics Euk: Bioinformatics 571-4 Genomics of Eukaryotes: Bioinformatics. (Same as PSAS 571) Genomics, Proteomics and Bioinformatics are rapidly making important contributions to the Life Science through biotechnology. An appreciation of the genomic tools is important to all in agriculture

and biology. The relationships between molecular biology bioinformatics and the biotechnology industry will be explored. Short independent practical projects in genomics, proteomics or bioinformatics will be pursued.

PLB578 - Population Genetics 578-3 Population Genetics. (Same as ZOOL 578) Genetic structure of populations, factors causing changes and principles governing rate and direction of change. Three lectures per week. Prerequisite: BIOL 304 and BIOL 305.

PLB580 - Departmental Seminar 580-1 to 6 Departmental Seminar. Student presentations and critiques of original research, including presentations by occasional invited speakers. Graded S/U only. Required of all graduate students in residence, when offered.

PLB589A - Sem in Plant Biology-Ecology 589A-1 to 12 (1 per topic per semester) Seminars in Plant Biology-Ecology. (Same as ZOOL 576) Discussions of current and historical research and literature in various subject areas of plant biology. Graded S/U only.

PLB589B - Seminar Plb-Molec/Bioch Physl 589B-1 to 12 (1 per topic per semester) Seminars in Plant Biology-Molecular and Biochemical Physiology. Discussions of current and historical research and literature in various subject areas of plant biology. Graded S/U only.

PLB589C - Sem Plb-Systmcs & Biodvrsity 589C-1 to 12 (1 per topic per semester) Seminars in Plant Biology-Systematics and Biodiversity. Discussions of current and historical research and literature in various subject areas of plant biology. Graded S/U only.

PLB590 - Introduction to Research 590-1 Introduction to Research. General introduction to research and graduate program policies. Guest presentations by department faculty. Fall only. Graded S/U only. Required of all graduate students during their first year in residence, when offered.

PLB591A - Research - Anatomy 591A-2 to 9 Research-Anatomy. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591B - Research - Bryology 591B-2 to 9 Research-Bryology. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591C - Research - Ecology 591C-2 to 9 Research-Ecology. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591D - Research - Morphology 591D-2 to 9 Research-Morphology. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591E - Research - Mycology 591E-2 to 9 Research-Mycology. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591F - Research - Paleobotany 591F-2 to 9 Research-Paleobotany. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591G - Research - Pathology 591G-2 to 9 Research-Pathology. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591H - Research - Photography 591H-2 to 9 Research-Photography. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591I - Research - Phycology 591I-2 to 9 Research-Phycology. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591J - Research - Physiology 591J-2 to 9 Research-Physiology. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB591K - Research - Systematics 591K-2 to 9 Research-Systematics. Assignments involving research and individual problems. Master's students may use this for their research for their thesis. Summer only. Graded S/U. Special approval needed from the instructor and the department.

PLB599 - Thesis 599-2 to 9 Thesis. Course to be taken in the preparation of the Master's thesis. Every semester. Special approval needed from the instructor. Graded S/U only.

PLB600 - Dissertation 600-1 to 36 (1 to 12 per semester) Dissertation. Course to be taken in the research for and in writing of the doctoral dissertation. Every semester. Graded S/U only. Special approval needed from the instructor.

PLB601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

PLB699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Plant Biology Faculty

Anterola, Aldwin M., Associate Professor, Ph.D., Washington State University, 2001.
Ashby, William C., Professor, Emeritus, Ph.D., University of Chicago, 1950.
Baer, Sara G., Professor, Ph.D., Kansas State University.
Battaglia, Loretta L., Associate Professor, Ph.D., University of Georgia, 1998.
Bozzola, John J., Professor, Emeritus, Ph.D., Southern Illinois University, 1975.
Crandall-Stotler, Barbara C., Professor, Emerita, Ph.D., University of Cincinnati, 1968.
Gage, Karla, Assistant Professor, Ph.D., Southern Illinois University, 2013.
Geisler, Matthew J. B., Associate Professor, Ph.D., The Ohio State University, 1999.
Gibson, David J., Distinguished Professor, Ph.D., University of Wales -Bangor, 1984.
Matten, Lawrence C., Professor, Emeritus, Ph.D., Cornell University, 1965
Mohlenbrock, Robert H., Distinguished Professor, Emeritus, Ph.D., Washington University, 1957.
Neubig, Kurt M., Assistant Professor, Ph.D., University of Florida, 2012.
Nickrent, Daniel L., Professor, Emeritus, Ph.D., Miami University, Ohio, 1984.
Renzaglia, Karen S., Professor, Ph.D., SIUC, 1981.
Richardson, John A., Associate Professor, Emeritus, M.F.A., Ohio University, 1969.
Robertson, Philip A., Professor, Emeritus, Ph.D., Colorado State University, 1968.
Sipes, Sedonia D., Associate Professor, Ph.D., Utah State University, 2001.
Tindall, Donald R., Professor, Emeritus, Ph.D., University of Louisville, 1966.
Vitt, Dale H., Distinguished Professor, Emeritus, Ph.D., University of Michigan, 1970.
Wood, Andrew J., Professor, Ph.D., Purdue University, 1994.
Yopp, John H., Professor, Emeritus, Ph.D., University of Louisville, 1969.

Political Science

The Department of Political Science offers a curriculum that provides students both a broad understanding of politics in the world today and the knowledge and skills that help students to specialize

and advance in their own areas of interest. The department offers a political science major and a political science minor for the Bachelors of Arts degree. Within the major, students may take a general track or choose one of three specializations: pre-law, international affairs, or public service. The major provides students the flexibility to choose from a wide range of courses that prepare them for their future plans and careers. Students are encouraged to link their academic study with practical experience through internships and study abroad programs.

Students planning to major in political science should consult with an academic advisor as early as possible to plan their program of study. Students majoring in political science must complete core and elective requirements listed below for a minimum of 33 hours of which at least 15 must be earned at Southern Illinois University Carbondale. A minimum of three of these courses must be taken at the 400 level. POLS 405, POLS 406, POLS 416, POLS 420, POLS 435, POLS 455, POLS 459, or POLS 480 also satisfies the College of Liberal Arts Writing-Across-the-Curriculum (WAC) requirement.

Bachelor of Arts Degree in Political Science, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	11
Requirements for Major in Political Science	33
Core Courses: POLS 114, POLS 250, POLS 270, and POLS 300	12
Political Science 400 level courses	9
Political Science electives	12
Minor	15-18
Electives	17-20
Total	120

Political Science Major - International Affairs Specialization

Political science majors preparing for careers in international affairs must meet the basic requirements for the political science major including core courses, a minimum of 33 credit hours in political science, three 400-level courses, international affairs specialization requirements, and completion of an existing minor or interdisciplinary program of study. The Director of Undergraduate Studies approves minors and study abroad programs.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	11

Degree Requirements	Credit Hours
Requirements for Major in Political Science	48-51
Core Requirements: POLS 114, POLS 250, POLS 270, and POLS 300	12
International Affairs Course Sequence POLS 372I, POLS 375, POLS 480	9
Political Science 400 level courses	6
Political Science electives	6
Minor (or interdisciplinary study)	15-18
Electives	17-22
Total	120

Political Science Major - Pre-Law Specialization

Political science majors preparing for law school must meet the basic requirements for the political science major including core courses, a minimum of 33 credit hours in political science, three 400-level courses, pre-law specialization requirements, and completion of an existing minor, internship, or interdisciplinary program of study. The Director of Undergraduate Studies approves minors and study abroad programs.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	11
Requirements for Major in Political Science	51-57
Core Requirements: POLS 114, POLS 250, POLS 270, and POLS 300	12
Pre-Law Course Sequence POLS 230, POLS 333A, POLS 333B, and any two of the following: POLS 435, POLS 436, POLS 437, POLS 438, or POLS 475	15
Political Science 400 level courses	3
Political Science 300-400 level electives	9
Minor, Internship, or Interdisciplinary Study - (12 hrs. of minor course must be 300-400 level)	12-18
Electives	17-20

Degree Requirements	Credit Hours
Total	120

Political Science Major - Public Service Specialization

Political science majors preparing for public service careers must meet the basic requirements for the political science major including core courses, a minimum of 33 credit hours in political science, three 400-level courses, public service specialization requirements and completion of an existing minor, internship, or interdisciplinary program of study. The Director of Undergraduate Studies approves minors and study abroad programs.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	11
Requirements for Major in Political Science	49-52
Core Requirements: POLS 114, POLS 250, POLS 270, and POLS 300	12
Public Service Course Sequence: POLS 340 and any three of the following: POLS 422, POLS 432, POLS 436, POLS 442, POLS 443, POLS 444, POLS 447 or POLS 449	12
Political Science Electives	12
Minor, Internship, (or Interdisciplinary Study)	12-18
Electives	18-21
Total	120

Political Science Minor

A minor in political science consists of 15 hours to be approved by the department advisor. At least nine of the required 15 credit hours must be earned at Southern Illinois University Carbondale.

Research and Teaching

The faculty in the department come from major academic institutions from around the country. Faculty teaching and research have received national and university wide recognition. Full-time faculty teach virtually all political science courses. The department emphasizes small sections and a close student/faculty relationship.

Advisement

Students in political science have access to the advisement services in the College of Liberal Arts. Students may also see a political science professor for more specialized counseling. Help is offered in course selection and registration, in long-range planning, and career information.

Awards

The department administers several endowed annual awards. See the departmental web page: politicalscience.siu.edu or contact the Director of Undergraduate Studies for additional information on eligibility requirements.

Political Science Courses

POLS114 - Intro American Politics 114-3 Introduction to American Politics. (University Core Curriculum) [IAI Course: S5 900] The development and current state of the American political system.

POLS150 - Polisci Orientation 150-1 Political Science Orientation. This course introduces students to the study of political science at SIUC. Students will meet the professors in the department and learn about the major subfields of the discipline, opportunities for internships and careers with a political science degree, the activities of SIUC student organizations affiliated with the department, options for graduate study in political science, and resources for improving students' research and writing skills.

POLS205 - Political Thought 205-3 Introduction to Political Thought. This course introduces students to the fundamental questions of political life through reading classical texts in the history of political thought. Topics covered include the nature of the state, justice, equality, liberty, and political morality. Emphasis is placed on students learning how to think about political phenomena in a systematic, explicit, and critical manner.

POLS213 - State & Local Government 213-3 State and Local Government. (University Core Curriculum) [IAI Course: S5 902] Functions and decision-making processes of governments at the state and local levels in the United States.

POLS215 - Politics of US Diversity 215-3 Politics of Diversity in the United States. (University Core Curriculum course) This course analyzes identity politics in the United States. Students will study American ethnic, racial, religious, cultural and gender relations and the policies available for their improvement. Topics include affirmative action, immigration policy, multiculturalism, assimilation, feminist politics, and church-state relations.

POLS230 - Law in American Society 230-3 Law in American Society. This is an introductory course recommended for students who want to consider possible careers in law. The following topics will be covered: the relation between law, justice, morality and religion; types and sources of law and legal rules; origin and development of common law; the role of lawyers, judges and juries; legal education in the United States. These topics will be explored through lectures, discussion groups and occasional guest speakers.

POLS250 - Intro to Comparative Politics 250-3 Introduction to Comparative Politics. (University Core Curriculum) [IAI Course: S5 905] This course provides an introduction to some major issues in the study of politics of countries around the world. Students analyze the broad array of political systems and political institutions in these countries. Topics include differences between democratic and non-democratic regimes, the causes of revolution, the role of social movements, and the politics of multi-ethnicity.

POLS270 - International Relations 270-3 Introduction to International Relations. This course provides a general introduction to major issues and controversies in the study of international relations. Topics can include war, nuclear deterrence, arms proliferation, terrorism and counter-terrorism, the United Nations, global trade and investment, economic sanctions, human rights and ethics in foreign policy.

POLS300 - Research Methods Pol Sci 300-3 Research Methods in Political Science. An examination of the research methods and data analysis techniques used by political scientists in their analysis of political questions and problems. Prerequisite: POLS 114. Lab fee: \$25.

POLS304 - Classical Political Theory 304-3 Classical Political Theory: Greeks, Romans, and Christians. (Same as CLAS 305) A survey of the works of important political thinkers in the ancient and medieval world including Homer, Thucydides, Plato, Aristotle, Cicero, Augustine, Maimonides, Averroes, and Thomas Aquinas.

POLS306 - Contemporary Political Theory 306-3 Contemporary Political Theory: Justice, Identity and Power. This course is a survey of the works of important political thinkers in the 20th and 21st centuries. Key figures in this survey may include Hannah Arendt, Judith Butler, John Dewey, Michel Foucault, Jurgen Habermas, Friedrich Hayek, John Rawls, Leo Strauss and Iris Marion Young.

POLS314I - Politics and Media 314I-3 American Politics and the Mass Media. (University Core Curriculum) (Same as JRNL 314I) The role of the mass media in American politics. Emphasis will be on the way in which the news media covers political actors and institutions, the effects of media on political behavior, and the expanding role of the internet in politics.

POLS316 - Latino Politics 316-3 Latino Politics. Provides an overview of Latino politics in the United States. Students will explore the complexities of Latino identities, histories, social movements, political participation, and political representation. The course will also address such contemporary political issues as citizenship, immigration, and language policy.

POLS317 - Polling & Public Opinion 317-3 Polling and Public Opinion. The nature of public opinion and its role in American democracy. Prerequisite: POLS 114.

POLS318 - Campaigns & Elections 318-3 Political Campaigns and Elections. Political campaigns and the role they play in American democracy. Prerequisite: POLS 114.

POLS319 - Political Parties 319-3 Political Parties. The role of political parties in American democracy, including the roles and activities of political parties in the United States. Prerequisite: POLS 114.

POLS321 - Congressional Politics 321-3 Congressional Politics. This course examines the origins and structure of Congress, congressional campaign behavior, legislative process, debates about representation and the relationship between Congress and the executive and judicial branches of government.

POLS322 - Presidential Politics 322-3 Presidential Politics. The role of the presidency in American democracy, including origin and background of the presidency, the organization of the executive branch, and the powers and functions of the president. Prerequisite: POLS 114.

POLS323 - The Supreme Court 323-3 The Supreme Court. The Supreme Court is often at the forefront of major policy debates in this country, deciding cases that have profound and lasting legal and political implications for the nation. In recent years, the Court has dealt with a wide array of cases that touch on important aspects of our social and political landscape, including the death penalty, same-sex marriage, abortion, campaign finance reform, religious freedom, freedom of speech, and redistricting. We will examine the legal and political authority of the Court, focusing on the evolution of judicial review and theories of judicial decision-making. Particular emphasis will be placed on the policy-making role of the Court as both a legal and political institution.

POLS326 - African American Politics 326-3 African American Politics. (Same as AFR 326) Designed to familiarize students with the role of African-Americans in American politics. An emphasis is placed on describing and analyzing how the structure of the American political system affects efforts by African-Americans in gaining the full benefits of the American political system. It will also address contentious sociopolitical issues that affect how African-Americans are treated in the context of the larger society.

POLS332I - Civil Liberties & Civil Rights 332I-3 Introduction to Civil Liberties and Civil Rights. (University Core Curriculum) This course deals with civil liberties and civil rights in the United States and how the United States Supreme Court has interpreted and applied these rights over time. Specifically, our focus will be on the First Amendment, the Right to Privacy, Discrimination, and Voting Rights. We will

also address how social, economic, and political forces have shaped the evolution and nature of these protections.

POLS333A - Constitutional Law I 333A-3 Constitutional Law I. This, the initial course in a two-course sequence, is concerned with the basic structure and power relationships in the American constitutional system. Topics include judicial review, judicial restraint, separation of powers, the federal system, national powers, state powers, the contract clause, and substantive due process. POLS 114 and POLS 230 recommended.

POLS333B - Constitutional Law II 333B-3 Constitutional Law II. This, the second course in the constitutional law sequence, concentrates on those provisions of the U.S. Constitution which protect individual rights and liberties against government encroachment. POLS 114 and POLS 230 recommended.

POLS334 - Const & Defendant Rights 334-3 The Constitution and Defendants' Rights. This course is designed to introduce students to the development of the law as it relates to the criminally accused. Topics include search and seizure, self-incrimination, double jeopardy, the right to counsel, cruel and unusual punishment and the right to due process.

POLS340 - Intro to Public Administration 340-3 Introduction to Public Administration. An introduction to the study of public bureaucracy. Theoretical, political, and practical issues of organization, staffing, financing, and other matters are surveyed. United States administration and organizational behavior are stressed.

POLS352I - Ethnicity & Nationalism 352I-3 Ethnicity, Nationalism and Culture. (University Core Curriculum) This course examines the causes, consequences and management of ethnic conflict and nationalism. Theoretical analysis will be combined with empirical case studies of ethnic and cultural competition, conflict and cooperation both within and between countries. Contributions from various scholarly disciplines will be incorporated into the examination of these issues. Additionally, moral dilemmas in the sphere of ethnicity and nationalism will be discussed.

POLS357 - Comparative Nation Building 357-3 Comparative Nation Building. A comparative study of the growth of the relationship of the armed forces with the civilian sector of the body politic, the selection, training, and professionalism of the officer corps, the control of the armed forces by the executive and legislature, the growth of strategic doctrine, insurgency and counter-insurgency warfare, and the analysis of the role of the armed forces as a governing group in a large number of non-western states. Prerequisite: POLS 250 recommended.

POLS366 - Latin American Politics 366-3 Latin American Politics. An in-depth analysis of specific problem areas in Latin American political processes as well as comparative study of selected Latin American nation-states.

POLS370 - Terrorism & Counter-Terrorism 370-3 Terrorism and Counter-Terrorism. (Same as CCJ 370) Using an interdisciplinary social science perspective, an analysis of the history, sources and consequences of domestic and international terrorism and the response by policymakers. Topics include tactics, goals, recruitment and financing of terrorists; the use of military force and legal institutions in dealing with terrorism; comparison of different state responses to terrorism; and international law, human rights, and counterterrorism.

POLS372I - Politics of Global Economy 372I-3 Politics of the Global Economy. (University Core Curriculum) Examines the interaction of politics and economics and of states and markets at the international level. Special attention to inequalities of wealth and power and to the politics of international trade, finance, investment, production, energy, transportation, information, technology and development.

POLS373 - Intl & Transnational Org 373-3 International and Transnational Organizations. The growth and role of international organizations, with special attention to the political effects of military, economic and ecological interdependence. The United Nations, regional organizations, and non-governmental organizations. The effects of these organizations on international peace and justice. Prerequisite: POLS 270 recommended.

POLS375 - War/Force in World Politics 375-3 War and Force in World Politics. An examination of the use of military power and force in modern world politics. Theoretical and empirical analysis of the causes and conduct of war, and investigation of the ways states, ethnic groups, and other actors develop, manage, and employ military power to further their interests. Topics include nuclear deterrence, arms control, weapons proliferation and terrorism. Prerequisite: POLS 270 recommended.

POLS390 - Readings: Political Science 390-1 to 3 Readings in Political Science. Specialized and advanced readings in areas not covered in other political science courses. The course must incorporate both reading and writing assignments, and should entail approximately the same amount of work as a standard 300-level political science course. A minimum of five pages of writing per credit hour is required, subject to the discretion of the Director of Undergraduate Studies (DUS). Students must choose a faculty member to direct the course and submit to the DUS a proposed syllabus and a completed Readings Approval Form prior to registration. For purposes of course assessment, students will submit to the DUS a copy of all written work done for the course. Students must have at least a 3.0 political science grade point average, and a minimum of 21 hours already earned in the major or completed the introductory course and six additional hours in the subfield of the proposed readings. No more than six hours of POLS 390 may be counted toward the departmental major. Special approval needed from the department.

POLS391 - Model Illinois Government 391-1 Model Illinois Government. This course is designed to prepare students for the annual Model Illinois Government (MIG) simulation held in Springfield, Illinois. The class is organized to help students develop their oral, written, and verbal presentation skills for participation in the MIG simulation. Prerequisite: POLS 213 or POLS 214 and consent of instructor.

POLS395 - Internship in Public Affairs 395-1 to 3 Internship in Public Affairs. Supervised field work in the office of a governmental agency, political party, interest group, legal agency, or other public affairs-oriented organization. The academic component of the course must incorporate both reading and writing assignments. A minimum of five pages of writing per credit hour is required, subject to the discretion of the Director of Undergraduate Studies (DUS). Students must choose a faculty member to direct the internship, and submit to the DUS a written proposal for the internship and a completed Internship Approval Form prior to registration. Students will normally be granted a maximum of 3 credit hours per internship, though they may petition the DUS for more. Political Science 395 is open only to political science majors and minors. Students must have at least a 2.5 political science grade point average and six hours in the major.

POLS396 - Ambassadors 396-1 Political Science Ambassadors. Political Science Student Ambassadors are undergraduate majors involved in outreach activities on behalf of the Department. Ambassadors are engaged in a variety of activities, including the preparation of a newsletter for undergraduates, mentoring students, organizing regular forums for the discussion of political issues, and meeting with prospective students, faculty, and nationally known visiting scholars and political figures.

POLS397 - Barbara Brown Sprngfld Intern 397-1 to 15 Barbara Brown Springfield Internship. The internship places well qualified students with bureaucratic agencies, select elected officials, political interest groups and lobbying organizations during the Spring semester which coincides with the Illinois legislative session. Interns perform a variety of tasks, including legislative and policy research, committee monitoring, and other activities focused on lobbying. Students are required to complete an academic component which includes maintaining an activities log, completing assigned readings and a final written project assigned by the director of the internship.

POLS398 - Demuzio Internship 398-1 to 3 Vince Demuzio Governmental Internship Program. The program offers legislative and agency internships. Legislative interns work with House and Senate members of both parties. Typically, interns work in the home office while attending classes full time and perform duties as regular staff members. Students may also intern with a state agency. Agency interns work in one of several local code department offices while attending classes full time and perform duties as regular staff members. Maximum of 15 hours.

POLS403 - Philosophy of Politics 403-3 Philosophy of Politics. (See PHIL 441)

POLS405 - Democratic Theory 405-3 Democratic Theory. (Same as PHIL 405) An examination of various aspects of democratic thought, including the liberal tradition and its impact upon the United

States. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Prerequisite: POLS 114 or consent of instructor.

POLS406 - American Political Thought 406-3 American Political Thought. This course is an advanced seminar in American political thought. The course focuses on the founding ideals and practices of the American republic and how these ideals functioned in subsequent social movements, political struggles, and ideological conflicts in American political history. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

POLS413 - Federalism 413-3 Federalism. An examination of relationships among national, state, and local governments in the American federal system, with emphasis on recent literature and contemporary issues. Special attention is given to fiscal relations, interbranch cooperation and specific intergovernmental programs. Prerequisite: POLS 114 with a grade of C or better.

POLS415 - Urban Politics 415-3 Urban Politics. An examination of the environment, institutions, processes and functions of government in an urban society with particular emphasis on current problems of social control and the provision of services in the cities of the U.S.

POLS416 - Senior Seminar 416-3 Senior Seminar in Political Science. Seminar for advanced undergraduate Political Science students to examine in depth a wide variety of topics; to be taught by different instructors. Available for use as the honors seminar. Graduate students not admitted. Not for graduate credit. Restricted to political science majors. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

POLS418 - Political Communication 418-3 Political Communication. (Same as CMST 451) A critical review of theory and research, which relate to the influence of communication variables on political values, attitudes, and behavior.

POLS419 - Political Sociology 419-3 Political Sociology. (Same as SOC 475) An examination of the social bases of power and politics, including attention to global and societal political relations, as well as individual-level political beliefs and commitments; primary focus on American politics.

POLS420 - Interest Group Politics 420-3 Interest Group Politics. The role interest groups in American democracy, including the political influence of contemporary interest groups, such as labor, racial and women's organizations. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Prerequisite: POLS 114 with a minimum grade of C.

POLS422 - NPOs and NGOs 422-3 Rethinking NPOs and NGOs: Doing Good Better. This course examines the question, can NPOs and NGOs do their good works better? In looking for the answer, students consider how perspective shapes reality, the need for a new framework for action, the conflict between limited resources and seemingly unlimited need, importance of local focus, conflicts between donors' demand for short-term results with a situation's requirement for a long-term program, issues caused by public policy, roles of gender and ethnicity in solving problems and the role of simplicity. Students will do this in anticipation of becoming employed by NPOs or NGOs. Prerequisite: POLS 340 with a grade of C or better or concurrent enrollment.

POLS432 - Grant Writing 432-3 Nonprofit and Public Grant Writing. This course examines the theories, skills and practices for writing grants for nonprofit and public organizations. Students practice these skills by being part of a team that actually prepares a grant for a nonprofit or a public organization. Prerequisite: POLS 340 with a minimum grade of C or concurrent enrollment.

POLS435 - Judicial Process & Behavior 435-3 Judicial Process and Behavior. An examination of the process by which judges in both trial and appellate courts at federal and state levels are selected and of the ways in which they make decisions. Attention to the structure of the courts. Study of the communication and impact of judicial decisions. The course provides some insight into the methods used to study judicial behavior. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. POLS 114 and 230 recommended prerequisites.

POLS436 - Administrative Law 436-3 Administrative Law. The procedural law of public agencies, particularly the regulatory commissions but also executive branch agencies exercising regulatory

functions. The exercise of discretion and its control through internal mechanisms and judicial review. POLS 114 and 230 recommended.

POLS437 - Jurisprudence (Law Theories) 437-3 Jurisprudence (Theories of Law). This course provides an examination of the major schools in legal thinking. We will investigate classic jurisprudential questions, including: theories of how judges decide cases, the role of morality and natural rights in determinations of law, and the role of legislative and judicial actors in the creation of law. POLS 114 and POLS 230 are recommended.

POLS438 - Women and the Law 438-3 Women and the Law. (Same as WGSS 438) This course is an advanced seminar in public law with a focus on gender, law and society. The course will engage with issues in feminist legal practice and the development of legal theories regarding gender. We will interrogate the relationship between theory and practice and the ways in which feminist jurisprudence has taken shape in the dynamics of this relationship. POLS 114 and 230 recommended prerequisites.

POLS439 - Comparative Law & Courts 439-3 Comparative Law and Courts. In the United States, topics ranging from abortion to gay rights and government surveillance are inevitably "solved" by the Supreme Court. Yet for many years the Supreme Court stood alone in the world in being able to overturn government policy. Increasingly, courts all over the world-often prodded by social actors-have begun developing their own unique solutions to these constitutional questions, in many cases challenging accepted social values and mores along the way. In this course we will investigate the development of courts and constitutional rights around the world, including both national rights and international human rights.

POLS442 - Human Resources Admin 442-3 Human Resources Administration. This course examines foundations of human resources administration. Emphasis is placed on the study of personnel management strategies, public sector labor relations, and other issues in the field of human resources.

POLS444 - Policy Analysis 444-3 Policy Analysis. An examination of basic concepts in the policy sciences, approaches to policy analysis, applications to selected areas of policy, and instruments of policy development.

POLS447 - Nonprofit Fundraising 447-3 Nonprofit Marketing and Fundraising. This course examines the unique resource development needs of nonprofit organizations and public organizations and looks at the principles and practical sides of meeting those through relationship management, marketing and fundraising. Time will be taken to look at all the aspects of a successful relationship, fundraising and marketing management plan. Students will be expected to participate in at least one fundraiser for a local nonprofit during the semester.

POLS449 - Nonprofit Management 449-3 Management of Nonprofit Organizations. This course examines the unique characteristics of nonprofit organizations that distinguish them from the public and for-profit sectors. It will explore the historical, legal, and socio-culture and economic contexts in which nonprofits function and the expectations that are attached in these contexts. Time will be devoted to such administrative issues as board development, strategic evaluation and planning, fiscal management, fundraising, human resources issues, working with staff, volunteers and governing boards, satisfying tax codes and service distribution.

POLS455 - Democratization 455-3 Democratization. An examination of transitions to democracy from authoritarian rule in countries around the world. Emphasis is on understanding from a comparative perspective on the social, economic, institutional, political, cultural and international circumstances that promote, inhibit and even reverse the spread of democratic forms of government. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

POLS456 - Gender & Global Politics 456-3 Gender and Global Politics. (Same as WGSS 446) An advanced course examining gender systems and women's situations across cultures and countries. This course also studies the impact globalization has had on gender issues by looking at women's activism at international and transnational levels. Topics covered include women's political representation, gender and culture, women's social movements, gender and development, and gendered policy issues. POLS 250 recommended.

POLS459 - Russia & Post-Soviet States 459-3 Russia and the Post-Soviet States. This course examines political developments in Russia and the other fourteen Soviet successor states that gained (or regained) independence following the demise of the Soviet Union in 1991. Particular attention is paid to the degree to which Soviet legacies of communist political institutions, state socialist economic policies and ethno-federalism continue to shape the politics and economics of these countries in the post-independence period. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

POLS460 - European Politics 460-3 European Politics. This course provides students an overview of European integration and a better understanding of the functioning of the European Union. The course opens with a survey of historical developments in both Eastern and Western Europe from 1914 to 1989. After this historical overview, the institutions and policies of the European Union are studied in detail.

POLS461 - Asian Politics 461-3 Asian Politics. What explains the economic transformation that has spread from India to China? Why has this so-called "economic miracle" bypassed other countries in the Asian continent? Why have democratic institutions been adopted in certain countries and not in others? This course provides a broad overview of the politics and economics of South and Southeast Asia since 1945.

POLS467 - Middle East Politics 467-3 Middle East Politics. This course is designed to examine the regional politics and security of the Middle East and North Africa in a historical and comparative context. This course discusses the historical evolution of the modern states in the region, the dynamics of inter-Arab and Arab-Israeli politics and security, the role of ethnicity and religion in domestic and regional politics, and great powers' penetration of the region.

POLS475 - International Law 475-3 International Law. Rules and practices governing states in their relations in peace and war. Prerequisite: POLS 270 recommended.

POLS476 - Religion and Politics 476-3 Religion and Politics. (Same as SOC 476) Examines the connection between religious beliefs and institutions and political beliefs and institutions. Comparative studies will focus on religious political movements in the United States and throughout the world.

POLS477 - American Foreign Policy 477-3 American Foreign Policy. This course surveys the conduct, goals and evolution of American foreign policy since World War II. It analyzes such issues as the role of institutions, culture and individuals in the formulation of American foreign policy, the interaction between domestic and foreign politics, and the debate over American grand strategy. Prerequisite: POLS 270 recommended.

POLS480 - Seminar in Int'l Relations 480-3 Seminar in International Relations. Discussion-based course analyzing empirical and normative (ethical) issues in the study of international relations. Particular emphasis is placed on developing students' critical thinking skills. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement. Prerequisite: POLS 270 recommended.

POLS494A - Honors Research 494A-1 to 3 Honors Research. Directed research for senior honors students. Political science honors students may register for these credits if they have met all the prerequisites described in the political science Handbook. A three-person faculty committee will administer an oral examination upon completion of senior thesis. Not for graduate credit.

POLS494B - Honors Research 494B-1 to 3 Honors Research. Available to students who have completed all prerequisites of the University Honors Program and receive approval of their project from a Political Science instructor. Not for graduate credit.

POLS500A - Political Methodology-Research 500A-3 Political Methodology. Seminars in empirical research methods (A) Research Design. Course covers quantitative and qualitative empirical studies of politics.

POLS500B - Political Methodology-Stats 500B-3 Political Methodology. Seminars in empirical research methods (B) Statistical Data Analysis in Political Science I. Provides a foundation in univariate and bivariate descriptive statistics; inferential statistics including hypothesis testing about population parameters, bivariate and multivariate relationships, measures of association, and correlation; and an introduction to linear regression. Lab fee: \$50.

POLS500C - Political Methodology-Stats 500C-3 Political Methodology. Seminars in empirical research methods. (C) Statistical Data Analysis in Political Science II. Provides in-depth instruction in multiple regression including assumptions of linear model, diagnostics and corrections for violation; estimating models using categorical dependent variables, nonlinear relationships, interactions, and extensions to advanced techniques as time allows. Prerequisite: POLS 500B (or permission of instructor). Lab fee: \$50.

POLS502 - Research Methods Topics 502-3 to 6 Topical Seminar in Research Methods. Advanced seminar in empirical research methods. Topics will vary by instructor. Lab fee: \$50.

POLS503 - Research Methods for PA 503-3 Research Methods for Public Administrators. The course aims to familiarize students with analytical techniques and research methods used currently by public administrators. Provides an introduction to applied statistics and data analysis for problems of interest to public administrators. Restricted to enrollment in MPA graduate program or consent of the department. Lab fee: \$50.

POLS513 - Topical Political Behavior 513-3 to 6 Topical Seminar in Political Behavior. Topic will vary with instructor. Student should see director of graduate studies for advanced syllabus.

POLS514 - Sem in Intergovernmental Rels 514-3 Seminar in Contemporary Intergovernmental Relations. An examination of relationships among national, state, and local governments in the American federal system, with emphasis on recent literature and contemporary issues. Prerequisite: POLS 340. Restricted to enrollment in MPA graduate program or consent of department.

POLS515 - Seminar in Urban Politics 515-3 Seminar in Urban Politics. Student should see director of graduate studies for advance syllabus.

POLS516 - Pro-Seminar Political Behavior 516-3 Pro-Seminar in Political Behavior. An overview of the study of political behavior in American and comparative politics.

POLS517 - Political Communication 517-3 Political Communication. Provides an introduction to the academic study of media and politics. The primary objective is to introduce graduate students to seminal theory and research and contemporary contributions in the study of media, politics, and political communication.

POLS519 - Survey Methodology 519-3 Survey Methodology for Political Science. Provides an overview of survey methodology. Students will learn how to administer surveys for use in political science and public administration. Topics include psychology of asking and answering questions; constructing questions and questionnaires; evaluating surveys; criteria for survey modes; sampling frames and sampling designs; and ethics for survey research methods.

POLS522 - NPOs and NGOs 522-3 Rethinking NPOs and NGOs: Doing Good Better. This course examines the question, can NPOs and NGOs do their good works better? In looking for the answer, students consider how perspective shapes reality, the need for a new framework for action, the conflict between limited resources and seemingly unlimited need, importance of local focus, conflicts between donors' demand for short term results with a situation's requirement for a long term program, issues caused by public policy, roles of gender and ethnicity in solving problems and the role of simplicity. Students will do this in anticipation of becoming leaders/managers of NPOs or NGOs.

POLS530 - Pro-Seminar in Public Law 530-3 Pro-Seminar in Public Law. A survey of the major literature in the field of public law at the graduate level.

POLS532 - Nonprofit/Public Grant Writing 532-3 Nonprofit and Public Grant Writing. Examines the theories, skills and practices for writing grants for nonprofit and public organizations. Students practice these skills by actually preparing grants for a nonprofit or a public organization. Prerequisite: POLS 537 with a grade of B or better.

POLS533 - Seminar in Public Policy 533-3 Seminar in Public Policy. This course examines the approaches to the study of public policy, including a discussion of public policy theory. The course will focus on the study of how policy is developed, applied, evaluated, and developed over time.

POLS534 - Governance Networks 534-3 Governance Networks in Public Administration. Explores the shifting locus of public service delivery over time, and examines alternative organizational arrangements

through which public services are provided to citizens. Emphasis is placed on the environment, structure and management of service delivery networks including combinations of public, private, and not-for-profit actors. Explores joint agreements, public-private partnerships, and contracting regimes as elements that bind network actors in the process of delivering high quality public services. Additional focus is invested in evaluating the leadership and management strategies that can ensure accountable and ethical public policy implementation by non-governmental organizations that act with the authority of government. The factors that facilitate network performance are also explored. Prerequisite: POLS 537.

POLS535 - Administrative Ethics 535-3 Ethical Foundations of Public Service. Examines the ethical dimensions of public service, particularly as it relates to the cultural context of the United States, while emphasizing the responsibility of the public manager to act with integrity. Assesses the virtues necessary for moral leadership in the public sector, as well as managerial strategies that reinforce ethical climates in public organizations and ethical behavior among public employees. Focuses on contemporary cases to explore the practical relevance of theories of morality and ethics. Special attention will be invested in examining the ethical implications of contemporary modes of governance and tensions between managerial and democratic values. Prerequisite: POLS 537.

POLS536 - Comparative Public Law 536-3 Seminar in Comparative Public Law. An examination of legal systems around the world.

POLS537 - Foundations of PA 537-3 Foundations of Public Administration. Introduction to the study and practice of administrative process and public management. Theoretical, political, and practical issues of organizing, staffing, financing and implementing government decisions and other issues are surveyed.

POLS538 - Public Law Topics 538-3 Topical Seminar in Public Law. Advanced seminar in public law. Topics will vary by instructor.

POLS539 - Program Evaluation 539-3 Program Analysis and Evaluation. The analysis and evaluation of governmental programs. Emphasis is placed upon use of analytical techniques to determine program impact and the use of evaluation in governmental decision making. Prerequisite: POLS 503. Restricted to enrollment in MPA graduate program or consent of department. Lab fee: \$50.

POLS540 - Seminar Public Management 540-3 Seminar in Public Management. Course is designed for advanced MPA students and examines social, political, legal and managerial constraints on the behavior of public administrators. Issues in ethics and the public's expectations of professional administrators are also examined. Restricted to students who are in the MPA program who have completed at least three required MPA courses, or the consent of the department.

POLS541 - Sem Applied Probs Public Admin 541-3 Seminar in Applied Problems of Public Administration. Study of selected problems in public administration and policy. Emphasis placed on the practitioner's perspective. Prerequisite: POLS 340 or equivalent. Restricted to enrollment in MPA graduate program or consent of department.

POLS542 - Public Budget & Fiscal Mgt 542-3 Public Budgeting and Fiscal Management. An examination of the theory and practice of budgeting in the public sector and of selected elements of fiscal management. The course focuses on administrative aspects of budgeting and is oriented toward preparation of students for careers in the public service. Students utilize primary materials in conducting individual or class projects aimed at development of budgetary skills. Prerequisite: POLS 340 or equivalent. Restricted to enrollment in MPA graduate program or consent of department. Lab fee: \$50.

POLS543 - Human Resource Management 543-3 Human Resource Management. A study of the processes and procedures used in contemporary public personnel systems. Emphasis is placed on examination of competing models of personnel administration, application of personnel management strategies to specific case problems and public sector labor relations. Prerequisite: POLS 340 or equivalent. Restricted to enrollment in MPA graduate program or consent of department.

POLS544 - Policy Analysis 544-3 Policy Analysis. This course focuses on the development and analysis of public policy alternatives and how they are used in governmental decision making.

POLS545 - Organization Theory & Behavior 545-3 Organization Theory and Behavior. An examination of various approaches to describing and understanding public organizations and the individuals

within them. Emphasis is placed on study of the important theoretical literature in the field and on the applications of the theory of practical management problems in governmental units and agencies. Prerequisite: POLS 340. Restricted to enrollment in MPA graduate program or consent of department.

POLS546 - Leadership Public Admin 546-3 Leadership in Public Administration. An examination of contemporary theories of leadership and their applicability on the public and non-profit sectors. The course emphasizes the range of behaviors and actions relevant to leadership in contemporary governmental organizations and the analysis of factors resulting in leadership success or failure. Restricted to enrollment in MPA graduate program or consent of the department.

POLS547 - Nonprofit Fundraising 547-3 Nonprofit Marketing and Fundraising. This course examines the unique resource development needs of nonprofit organizations and public organizations and looks at the principles and practical sides of meeting those through relationship management, marketing and fundraising. Time will be taken to look at all the aspects of a successful relationship, fundraising and marketing management plan. Students will be expected to participate in at least one fundraiser for a local nonprofit during the semester.

POLS549 - Admin Nonprofit Organizations 549-3 Administration of Nonprofit Organizations. Examines the characteristics of nonprofit organizations that distinguish them from the public and for-profit sectors. Explores social and economic functions of nonprofits and such administrative issues as fundraising, working with volunteers and governing boards, satisfying tax codes and service distribution. Prerequisite: POLS 340 or equivalent. Restricted to enrollment in MPA graduate program or consent of department.

POLS550 - Pro-Seminar in Public Admin 550-3 Pro-Seminar in Public Administration. A survey of the major literature in the field of public administration. The course will synthesize and integrate the literature and provide an overview of topics to be covered in greater detail in other seminars. Required of M.A. and Ph.D. students offering public administration as a graduate area before enrolling in more advanced subject-matter seminars.

POLS551 - Aviation Policy Law Reg 551-3 Aviation Policy, Law and Regulation. (Same as AVM 551) Examination of the history of American aviation policy, law and regulation. The course focuses primarily on the development, implementation and enforcement of aviation policies and regulations at the federal level. Special attention is paid to the interaction of various government agencies and constituency groups, such as the aircraft industry, airport authorities, airlines, private pilots and passengers. In addition to the historical survey, students will analyze current policy and regulatory trends and identify future problems and opportunities for American aviation policy. Restricted to enrollment in MPAA graduate program or consent of instructor.

POLS552 - Adv Airport Administration 552-3 Advanced Airport Administration. (Same as AVM 552) This course will address the role and function of the airport administrator, especially related to the tasks of developing, operating and maintaining various airport services to meet the needs of key airport users. This course will study key airport administration cases at primary, commercial service, reliever and general aviation airports. Meeting key airport regulations concerning operations and security will be a focus of the course. Restricted to enrollment in MPAA graduate program or consent of instructor.

POLS553 - Adv Airport Safety Admin 553-3 Advanced Airport Safety Administration. (Same as AVM 553) The Aviation Safety Administrator's job function and responsibility for safety and accident prevention within an aviation organization is examined using the case study method. The relevant theory, concepts, procedures and techniques of resource allocation, organizational design, decision modeling, task assignment, delegation of authority and responsibility, establishment of organizational goals and priorities and risk management as they relate to Aviation Safety are included. The job functions of an Aircraft Accident Investigation Team and of an Aviation Safety Inspector will be studied. Aviation safety administration literature will be reviewed. Restricted to enrollment in MPAA graduate program or consent of instructor.

POLS554 - Aviation Planning 554-3 Aviation Planning. (Same as AVM 554) This course fulfills a need for a semester length course on aviation planning for students concentrating in aviation administration. Airports and the aviation industry are rapidly expanding, and aviation is growing in importance on the nation's transportation agenda. Broader issues of law and regulation will be covered in an existing course, POLS 551. Restricted to enrollment in MPAA graduate program or consent of instructor.

POLS557 - Public Financial Admin 557-3 Public Financial Administration. The seminar provides a basic understanding of the public budgeting decision-making processes and financial management practices. It provides students with knowledge and hands-on experience of collecting and analyzing governmental data, generating financial reports, and presenting findings. It also provides students with an understanding of revenue sources and different factors that could potentially influence collections. Moreover, it gives students the opportunity to acquire experience in revenue forecasting and budget decision-making through homework assignments and in-class exercises. Prerequisites: POLS 542 and POLS 503 with grades of B or better. Lab fee: \$50.

POLS559 - Museum Collection Mgt 559-3 Museum Collection Management. Provides students with the knowledge required to professionally use and manage a museum's collection. Addresses policies and principles of collections management, law, loans and custody, and acquisitions. Prerequisite: AD 447 or consent of instructor.

POLS560 - Pro-Sem in Comparative Politics 560-3 Pro-Seminar in Comparative Politics. Survey of the major literature in comparative politics at the graduate level.

POLS569 - Top Sem in Comparative Politics 569-3 to 9 (3,3,3) Topical Seminar in Comparative Politics. Advanced seminar in comparative politics. Topics will vary by instructor.

POLS570 - Pro Seminar Intl Relations 570-3 Pro-Seminar in International Relations. Survey of the major literature in international relations at the graduate level.

POLS576 - Religion and Politics 576-3 Religion and Politics. Examines empirical studies of religion and politics, including research on behavior, institutions, and movements. Topics include theories of religion, case studies of religious traditions, church and state relations, measurement of religion, and other topics on the intersection of religion and politics.

POLS580 - IR Topics 580-3 to 9 (3,3,3) Topical Seminar in International Relations. Advanced seminar in empirical international relations. Topics will vary by instructor.

POLS590 - Readings 590-1 to 6 Readings. Supervised readings in selected subjects. Prerequisites: POLS 592A-D for specific field, or POLS 545 or POLS 500A.

POLS591 - Individual Research 591-1 to 9 Individual Research. Selection, investigation and writing of a research paper under the personal supervision of a member of the department graduate staff. Prerequisite: completion of the appropriate pro-seminar for the field in which readings or individual research is to be done.

POLS592A - Found Pol Sci-Pol Behavior 592A-3 Foundations of Political Science-Political Behavior. Supervised readings in "classics" of the discipline.

POLS592B - Found Poli Sci-Comp Politics 592B-3 Foundations of Political Science-Comparative Politics. Supervised readings in "classics" of the discipline.

POLS592C - Found Poli Sci-Intl Relations 592C-3 Foundations of Political Science-International Relations. Supervised readings in "classics" of the discipline.

POLS592D - Found Poli Sci-Public Law 592D-3 Foundations of Political Science-Public Law. Supervised readings in "classics" of the discipline.

POLS593 - Preprofessional Sem Pol Sci 593-1 Preprofessional Seminar in Political Science. Designed to give the student an introduction to the major professional roles in the discipline. The requirements of teaching, research, publication and service are covered with discussion of where each fits into the professional role requirements and examples of how each is accomplished. Required of all Ph.D. and M.A. students in political science and other teaching assistants in political science. Graded S/U only.

POLS594 - Preprofessional Sem Public Admin 594-1 Preprofessional Seminar in Public Administration. Guides new students in preparing for the Comprehensive Exam and Professional Portfolio displaying competencies developed through their course work. Assists students writing a Research Paper through the proposal and committee process. Preparation of resume, conducting job searches and other

professional development topics are also addressed. Required of all MPA students. Graded S/U only. Restricted to enrollment in MPA graduate program or consent of department.

POLS595 - Internship in Public Affairs 595-1 to 6 Internship in Public Affairs. Fieldwork in the office of a governmental or quasi-governmental agency. The internship is arranged by the field coordinator of the M.P.A. degree program and provides a stipend as negotiated by the coordinator and agency representative. A paper in which the student correlates academic knowledge with practical internship experience is required. Mid-career M.P.A. students may receive credit upon completion of a paper relating previous work experience to public administration literature and theory. Restricted to enrollment in MPA graduate program or consent of department. Graded S/U only.

POLS596 - Research Paper-Public Affairs 596-3 Research Paper in Public Affairs. Upon successful completion of core courses, the student expands and develops a previously written MPA graduate program paper. The project involves an issue or problem in public administration and is written with the approval and under the supervision of the student's committee chair. Restricted to enrollment in MPA graduate program or consent of department.

POLS598 - Dissertation Prospectus 598-1 Dissertation Prospectus. Workshop in dissertation topic selection and prospectus writing; enrollment required prior to completing preliminary examinations.

POLS599 - Thesis 599-1 to 6 Thesis. Maximum of six hours to be counted toward a degree. Special approval needed from the instructor.

POLS600 - Dissertation 600-1 to 40 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

POLS601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

POLS699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Political Science Faculty

Bloom, Stephen, Associate Professor, Ph.D., UCLA, 2004.

Burnside, Randy, Associate Professor, Ph.D., University of New Orleans, 2004.

Bricker, Benjamin, Assistant Professor, Ph.D., Washington University, 2013.

Comparato, Scott A., Associate Professor, Ph.D., Washington University, 2000.

Foster, John L., Associate Professor, Emeritus, Ph.D., University of Minnesota, 1971.

Grant, J. Tobin, Professor, Ph.D., The Ohio State University, 2001.

Hamman, John A., Associate Professor, Ph.D., University of Illinois, 1988.

Jackson, John S., III, Professor, Emeritus, Ph.D., Vanderbilt University, 1971.

McClurg, Scott, Professor, Ph.D., Washington University, 2000.

Mulligan, Kenneth, Associate Professor, Ph.D., The Ohio State University, 2004.

Pink, Stephanie, Assistant Professor, Ph.D., Mississippi State University, 2011.

Shulman, Stephen, Associate Professor, Ph.D., University of Michigan, 1996.

Stewart, La Shonda, Associate Professor, Ph.D., Mississippi State University, 2008., 2014.

Tilley, Virginia Q., Professor, Ph.D., University of Wisconsin, 1997.

Public Safety Management

The Bachelor of Science in Public Safety Management currently is offered only at off-campus locations and provides those with a public safety-related technical background with a two-year, upper division

program of study that enhances the successful graduate's pursuit of a career in the Public Safety industry. The program is designed to provide practical course work in areas of management and supervision for Public Safety professionals. Public Safety Management offers three specializations: Fire Service Management, Emergency Medical Services, and Emergency Management Administration. Admission to the program requires prior completion of a Public Safety related degree or prior formal training equivalent to a fire service related degree or prior Public Safety-related licensure or certification, or prior employment in a Public Safety-related field.

The Capstone Option is available for eligible students who meet the Capstone criteria outlined in the Capstone Option section. Those seeking the Capstone Option must meet all eligibility criteria, including the Public Safety-related degree with a 2.0 GPA or better, no later than the end of their first semester in the bachelor's degree program.

The Bachelor of Science in Public Safety Management is an ideal program of study for Public Safety professionals who have a prior, Public Safety-related degree or its equivalent or who have extensive work experience in the Public Safety industry. Successful graduates are prepared for career enhancing opportunities that include Public Safety related management and supervisory positions, the insurance industry, the public safety vehicle manufacturing industry and other related fields.

The Public Safety Management program has signed articulation agreements with numerous colleges. Check with the Public Safety Management Program for a current list. These agreements take advantage of the Capstone Option.

For additional information about this major, contact the Public Safety Management office at (618) 453-7277 or visit our webpage at asa.siu.edu/academics/off-campus-programs/programs.

Bachelor of Science Degree in Public Safety Management, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Capstone Core Curriculum Requirements	30
Requirements for Major in Public Safety Management	48
Core Requirements: PSM 332, PSM 360, PSM 387, PSM 388, PSM 398, PSM 423, and PSM 425	21
15 hours from PSM 383, PSM 390, PSM 305, PSM 421, and TRM 316	15
12 hours selected from PSM 301, PSM 319, PSM 350, PSM 401 and PSM 450	12
Approved Career Electives (Formal course work or its equivalent that is Public Service-related and technical, managerial or supervisory in nature)	33
Total	120

Fire Service Management Specialization

Degree Requirements	Credit Hours
Third Year - Fall/Spring	24
PSM 332, PSM 383, PSM 421, PSM 387, PSM 316, PSM 305, PSM 302, PSM 350	
Fourth Year - Fall/Spring	24
PSM 332, PSM 383, PSM 421, PSM 387, PSM 316, PSM 305, PSM 302, PSM 350	

Emergency Medical Services Specialization

Degree Requirements	Credit Hours
Third Year - Fall/Spring	24
PSM 332, PSM 383, PSM 421, PSM 387, PSM 316, PSM 305, PSM 302, PSM 350	
Fourth Year - Fall/Spring	24
PSM 403, PSM 404, PSM 406, PSM 407, PSM 408, PSM 409, PSM 365, PSM 450	

Emergency Management Administration Specialization

Degree Requirements	Credit Hours
Third Year - Fall/Spring	24
PSM 332, PSM 383, PSM 421, PSM 387, PSM 316, PSM 305, PSM 302, PSM 350	
Fourth Year - Fall/Spring	24
PSM 410, PSM 411, PSM 412, PSM 417, PSM 416, PSM 418, PSM 365, PSM 450	

Public Safety Management Courses

PSM101 - Intro to Paramedicine 101-2 Introduction to Paramedicine. This course is designed to introduce the student to EMS systems to include communications, documentation, public health systems,

critical thinking skills, and medical/legal issues. Prerequisites: valid CPR card for Healthcare Providers and Illinois EMT-B license.

PSM102 - Anatomy & Physiology 102-3 Anatomy and Physiology. Integrates a complex depth and comprehensive breadth of the knowledge of the anatomy and physiology of all human systems. Integrates comprehensive knowledge of pathophysiology of major human systems. Integrates comprehensive knowledge of life span development. Prerequisites: valid CPR card for Healthcare Providers and Illinois EMT-B license.

PSM103 - Pharmacology and Respiratory 103-4 Pharmacology and Respiratory. Integrates comprehensive knowledge to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient. Integrate scene and patient assessment with knowledge of epidemiology and pathophysiology to form a field impression. Integrates complex knowledge of anatomy, physiology into the assessment to develop and implement a treatment plan with the goal of ensuring a patient airway, adequate mechanical ventilation, and respiration for patients of all ages. Prerequisites: valid CPR card for Healthcare Providers and Illinois EMT-B license.

PSM104 - Cardiac 104-2 Cardiac. Integrates assessments findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment/disposition plan for a patient with a medical complaint. Prerequisites: valid CPR card and Illinois EMT-B license.

PSM105 - Electrocardiogram 105-2 Electrocardiogram. Integrates assessments findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment/disposition plan for a patient with a medical complaint. Prerequisites: valid CPR Card and Illinois EMT-B license.

PSM106 - Neonatal/Neurologic 106-3 Neonatal/Neurologic. Integrate assessments findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment/disposition plan for a patient with a medical complaint. Integrate assessment findings with principles of pathophysiology and knowledge of psychosocial needs to formulate a field impression and implement a comprehensive treatment/disposition plan for patients with special needs. Prerequisites: valid CPR card and Illinois EMT-B license.

PSM107 - Hematology and Skeletal 107-3 Hematology and Skeletal. Integrate assessments findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment/disposition plan for a patient with a medical complaint. Integrates assessment findings with principles of epidemiology and pathophysiology to formulate a field impression to implement a comprehensive treatment/disposition plan for an acutely injured patient. Prerequisites: valid CPR card and Illinois EMT-B license.

PSM108 - Airway Management 108-2 Airway Management. Integrates comprehensive knowledge of causes and pathophysiology into the management of cardiac arrest and pre-arrest states. Integrates comprehensive knowledge of causes and pathophysiology into the management of shock, respiratory failure or arrest with an emphasis on early intervention to prevent arrest. Prerequisites: valid CPR card and Illinois EMT-B license.

PSM109 - Extrication 109-3 Extrication. Integrates assessment findings with principles of pathophysiology and knowledge of psychosocial needs to formulate a field impression and implement a comprehensive treatment/disposition plan for patients with special needs. Knowledge of operational roles and responsibilities to ensure patient, public, and personnel safety. Prerequisites: valid CPR card and Illinois EMT-B license.

PSM110 - PEPPS/PALS 110-4 PEPPS/PALS. The PALS course gives health care professionals the knowledge and skills to better recognize and treat critically ill infants and children. The course uses a scenario-based, team approach to teach pediatric emergency management of pediatric patients approaching or already in respiratory or cardiac arrest. The course covers treatment beyond the first few minutes of an emergency. Course uses learning stations for practice of essential skills simulated clinical scenarios that encourage active participation. Hands-on format reinforces skills proficiency. Prerequisites: valid CPR card and Illinois EMT-B license.

PSM130 - Ambulance Practicum I 130-2 Ambulance Practicum I. In addition to the required didactic and psychomotor instruction, this course requires that the student have patient interactions in a clinical setting. Ideally, areas that have access to an Emergency Medical Services system should send students into the field with experienced preceptors. The student must participate in and document patient contacts in a field experience approved by the medical director and program director. Students should observe emergency department operations for a period of time sufficient to gain an appreciation for the continuum of care. Students must perform patient assessments. These can be performed in an emergency department, ambulance, clinic, nursing home, doctor's office, etc. or on standardized patients if clinical settings are not available. The program director or medical director must establish appropriate relationships with various clinical sites to assure adequate contact with patients. Prerequisites: valid CPR card and Illinois EMT-B license.

PSM131 - Ambulance Practicum II 131-2 Ambulance Practicum II. In addition to the required didactic and psychomotor instruction, this course requires that the student have patient interactions in a clinical setting. Ideally, areas that have access to an Emergency Medical Services system should send students into the field with experienced preceptors. The student must participate in and document patient contacts in a field experience approved by the medical director and program director. Students should observe emergency department operations for a period of time sufficient to gain an appreciation for the continuum of care. Students must perform patient assessments. These can be performed in an emergency department, ambulance, clinic, nursing home, doctor's office, etc. or on standardized patients if clinical settings are not available. The program director or medical director must establish appropriate relationships with various clinical sites to assure adequate contact with patients. Prerequisites: valid CPR card and Illinois EMT-B license; PSM 130.

PSM132 - Ambulance Practicum III 132-2 Ambulance Practicum III. The final phase of Paramedic education is the Capstone Field Internship. The Capstone Field Internship is the summative evaluation of Paramedic education where the student has all of the cognitive and psychomotor skills needed to act and serve as a Team Leader while delivering patient care. The Team Leader responsibilities are delegated by direct observation and under the responsibility of an approved and trained preceptor who is appropriately licensed and credentialed to work in an approved EMS system. This evaluation of the student's ability to perform as a competent entry-level Paramedic is the last opportunity to identify areas that need remediation prior to the student becoming eligible for Paramedic certification. The ideal scenario would be that potential employers provide an appropriate orientation and evaluation process prior to allowing the new Paramedic to perform alone as the Team Leader. Prerequisites: valid CPR card and Illinois EMT-B license; PSM 131.

PSM150 - Emergency Room Practicum I 150-1 Emergency Room Practicum I. During the progress of this course, the student will encounter clinical experiences in various departments. A large majority of clinical experience will occur in the Emergency Department. During this experience the student will complete hours of required Emergency Department rotation in the ED of Presence St. Mary's Hospital or Presence St. Joe's Hospital in Joliet. The ED is located in the west pavilion on the first floor. The purpose of this rotation is to provide a concentrated patient population for the paramedic student to enhance their didactic knowledge and refine skills learned so far in the paramedic course. Another aspect of this rotation that differs from all other rotations is the interaction and evaluation of the student by a physician preceptor. There are only two students allowed to do clinical in the ED at a given time. Prerequisites: valid CPR card and Illinois EMT-B license.

PSM151 - Emergency Room Practicum II 151-1 Emergency Room Practicum II. During the progress of this course, the student will encounter clinical experiences in various departments. A large majority of clinical experience will occur in the Emergency Department. During this experience the student will complete hours of required Emergency Department rotation in the ED of Presence St. Mary's Hospital or Presence St. Joe's Hospital in Joliet. The ED is located in the west pavilion on the first floor. The purpose of this rotation is to provide a concentrated patient population for the paramedic student to enhance their didactic knowledge and refine skills learned so far in the paramedic course. Another aspect of this rotation that differs from all other rotations is the interaction and evaluation of the student by a physician preceptor. There are only two students allowed to do clinical in the ED at a given time. Prerequisites: valid CPR card and Illinois EMT-B license; PSM 150.

PSM152 - Emergency Room Practicum III 152-2 Emergency Room Practicum III. During the progress of this course, the student will encounter clinical experiences in various departments. A large majority

of clinical experience will occur in the Emergency Department. During this experience the student will complete hours of required Emergency Department rotation in the ED of Presence St. Mary's Hospital or Presence St. Joe's Hospital in Joliet. The ED is located in the west pavilion on the first floor. The purpose of this rotation is to provide a concentrated patient population for the paramedic student to enhance their didactic knowledge and refine skills learned so far in the paramedic course. Another aspect of this rotation that differs from all other rotations is the interaction and evaluation of the student by a physician preceptor. There are only two students allowed to do clinical in the ED at a given time. Prerequisites: valid CPR card and Illinois EMT-B license; PSM 151.

PSM170 - Clinical I 170-2 Clinical I. Complete clinical rotations in various clinical areas as listed. All students shall complete the minimum hours needed for each area. The total number of patient contacts for program completion must be attained regardless of hours completed. See each section for more detailed description. Prerequisite: valid CPR card and Illinois EMT-B license.

PSM171 - Clinical II 171-3 Clinical II. Complete clinical rotations in various clinical areas as listed. All students shall complete the minimum hours needed for each area. The total number of patient contacts for program completion must be attained regardless of hours completed. See each section for a detailed description of each. Prerequisite: valid CPR card and Illinois EMT-B license; PSM 170.

PSM258 - Public Safety Work Experience 258-1 to 30 Public Safety Work Experience. Credit will be granted via school evaluation of prior public safety management related job skills, management-worker relations and supervisory experience. Unless otherwise determined by the school director, this credit may be applied only to the approved career electives requirement of the public safety management degree. Restricted to Public Safety Management major.

PSM259 - Public Safety Occupational Ed 259-1 to 60 Public Safety Occupational Education. Credit granted via school evaluation of past public safety management-related occupational education experience. Unless otherwise determined by the school director, this credit may be applied only to the approved career electives requirement of the public safety management degree. Restricted to Public Safety Management major.

PSM260 - Fire Apparatus Engineer 260-3 Fire Apparatus Engineer. The Fire Apparatus Engineer course is designed to meet a specialty need within the fire service/Public Safety. The program equals or exceeds the requirements of NFPA 1002, Fire Apparatus Driver/Operator Professional Qualifications, current edition.

PSM301 - Public Safety Mgmt Research 301-3 Introduction to Public Safety Management Research. An introduction to library resources, electronic media resources and formal academic writing styles common to public safety management research. Introduction to basic theories, concepts and practices pertinent to public safety management. May be independent study. Restricted to Public Safety Management major.

PSM302 - Ethics in Public Safety 302-3 Ethics in Public Safety. This course examines the basic principles of ethics as related to public safety operations and management with special attention given to current issues in public safety.

PSM305 - Philosophy of Leadership 305-3 Developing a Personal Philosophy of Leadership. This course will introduce and provide the participant with a deeper understanding of self as it relates to leadership philosophies, knowledge, skills, and abilities. Each participant will study and explore their core values, ethics, decision making, and begin to develop a personal philosophy of leadership. Through course presentations, dialogue, and learning activities, the participant will identify leadership roles in the community to include self, family, professional, and social. In addition, they will be able to define the difference between leadership and management. The participant will complete self assessments to gain insights into their personal leadership style and characteristics and participate in video and written case studies to further explore their understanding of leadership.

PSM316 - Apps of Technical Writing 316-3 Applications of Technical Writing. (Same as ISAT 366 and TRM 316) The course will increase the student's ability in communicating various workplace documents common to technical disciplines. The course is designed to meet the writing portion of the College's Communication-Across-the-Curriculum initiative. Prerequisite: ENGL 101 with a grade of C or better. Restricted to PSM major or consent of program coordinator.

PSM319 - Occupational Internship 319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

PSM332 - Labor Relations 332-3 Labor Relations for Fire and Emergency Services. The student will gain a general understanding of the economic situation for fire and emergency services, of which labor management problems represent a subset. Students will develop a perspective of the evolution of labor relations in the United States and fire and emergency services economy and how the interaction of labor and management differs throughout the world. The collective bargaining section introduces the student to the techniques of collective bargaining in fire and emergency services.

PSM350 - Readings in Public Safety Mgmt 350-3 Readings in Public Safety Management. The use of written and electronic media resources relevant to Public Safety management and the development of a Public Safety management research bibliography. The use of bibliographic resources to produce written comparative or persuasive research reports. May be independent study. Prerequisite: None. Restricted to Public Safety Management major.

PSM360 - Personnel Systems 360-3 Personnel Systems for Fire and Emergency Services. This course examines relationships and issues in personnel administration and human resource development within the context of fire-related organizations, including personnel management, organizational development, productivity, recruitment and selection, performance management systems, discipline, and collective bargaining.

PSM365 - Grant Writing 365-3 Grant and Proposal Writing for Public Safety. Comprehensive presentation of public safety grants from governmental, public and private funding sources. Course covers the funding application, approval process, and grant administration. Students will prepare a grant proposal with objective statement, study methodology, work programs/schedules and budget.

PSM383 - Data Interpretation 383-3 Data Interpretation. A course designed for students beginning their major program of study to examine data use in their respective professions. Emphasis will be placed upon an understanding of the basic principles and techniques involved with analysis, synthesis and utilization of data.

PSM387 - Fiscal Aspects Public Safety 387-3 Fiscal Aspects of Public Safety. An introduction to the fiscal problems encountered in the administration of public safety facilities.

PSM388 - Legal Aspects 388-3 Political and Legal Foundations of Fire and Emergency Services. The student will learn basic law principles, identify sources of American laws, and recognize the structural framework of American law. Additionally, the student will be able to identify the principles of law which relate to management of fire protection services and areas of law which impact on the operations of fire service management, including applicable laws and ordinances (Fire Fighter Bill of Rights, et al), collective bargaining, and state/local civil service Fire/Police Commission provisions hearing protocols. Further, the student is able to effectively participate in the conduct of a mock hearing, following applicable protocols for such, in accordance with due process and legal requirements and effectively document and enforce such findings.

PSM390 - Govt Aspects of Public Safety 390-3 Governmental Aspects of Public Safety. The role of subnational governments in the management of the fire services. The demographic and political environment in which the fire services operate. The duties, powers and obligations of governmental agencies relative to the operation of a fire department. Restricted to Public Safety Management major.

PSM398 - Risk Reduction 398-3 Risk Reduction for Fire and Emergency Services. This course, designed for the middle-level fire service manager, introduces the concept of risk management and examines its applicability in the fire service. Particular emphasis is placed on developing and implementing a fire service risk management program in both career and paid on-call departments.

PSM401 - Apps of Fire Research 401-3 Applications of Fire Research in Fire and Emergency Services. This course examines the rationale for conducting fire research, various fire protection research activities, and research applications, including the test standards and codes, structural fire safety, automatic

detection and suppression, life safety, and firefighter health and safety. May be independent study. Not for graduate credit. Prerequisite: PSM 350.

PSM402 - Current Issues 402-3 Current Issues in Public Safety Management. A review of the current problems affecting public safety with particular emphasis on resource allocation, planning, and constraints. Not for graduate credit.

PSM403 - EMS Education 403-3 Emergency Medical Services Education. This course is for students interested in Emergency Medical Services (EMS) education. This course introduces the EMS professional to the education system as it relates to EMS education. Students explore issues in curriculum development, teaching, program direction, and development. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM404 - EMS Communications 404-3 Emergency Medical Services Communications Management. This course is for students interested in the management of Emergency Medical Services (EMS) communications systems. This course introduces the EMS professional to the communications systems and methodologies available to governmental and private EMS providers. Students explore issues in EMS communications technology, software, data management, and physical plant considerations. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM405 - Leading Others 405-3 Leading Others. This course is the second in the continuing series of the Leadership and Management program. It is designed to provide the participant with the knowledge, skills, and abilities to effectively lead others. Prerequisite: PSM 305.

PSM406 - Management of EMS 406-3 Management of Emergency Medical Services. This course is for students interested in the practice and principles of Emergency Medical Services (EMS) systems management and the processes that contribute to the effectiveness of day-to-day operations within an EMS organization. This course introduces the EMS professional to topics that include government structure, strategic planning, injury prevention, risk management and safety, customer service, human resources management, financial management, fleet management, career development, quality management, data collection and research, labor relations, and special operations. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM407 - EMS Public Information 407-3 Emergency Medical Services Public Information and Community Relations. This course is for students interested in public information and community relations in Emergency Medical Services (EMS). This course introduces the EMS professional to benefits of community information and community relations. Students explore issues in marketing, crafting the message, identifying the audience, developing programs, and creating press releases. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM408 - EMS Risk Management 408-3 Emergency Medical Services Risk Management and Safety. This course introduces the student to the risk management principles of an Emergency Medical Services (EMS) agency. Emphasis is on safety from the perspective of the field provider. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM409 - EMS Legal Aspects 409-3 Legal, Political and Regulatory Environment of Emergency Medical Services. This is an upper-level baccalaureate course for students interested in the field of legal, political and regulatory environment of Emergency Medical Services (EMS). This course introduces the EMS professional to the legal aspects of EMS. Students explore issues in malpractice, consent and refusal of treatment, Occupational Safety and Health Administration (OSHA), employment issues, and risk management. EMS students gain insights into the legal liabilities in EMS. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM410 - Response to Natural/Tech Event 410-3 Organizational Response to Natural and Technological Events. This course examines responses to natural and man made disasters. It also looks at the unique role of the local first responder with other governmental agencies. Students will identify the common elements of a disaster response and the roles of each emergency responder and agency. Course emphasis is on the actions and procedures "at the scene" where decisions are made rather than concepts and policies applied by officials physically removed from the scene. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM411 - Homeland Defense 411-3 Homeland Defense. This course explores the boundaries of this 21st century national security mission by examining the threats, the actors, and the organizational structures and resources required to defend the American homeland. It examines how we have shifted the emphasis to protect the US homeland from the defensive measures taken during the Cold War to both reactive and proactive actions against the wide variety of asymmetric threats posed by Global Terrorism. The terrorist attacks on September 11 and the pursuant anthrax tragedies have forced homeland security to the forefront of American policymaking. Vast arrays of topics are covered by necessity-homeland security is a vast subject area. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM412 - Exercise and Evaluation 412-3 Fire Service Exercise and Evaluation. Students will be trained in determining public need during an emergency event through exercise. Students will learn the impact that effective project and operational planning and management can have on the overall effectiveness of a Public Safety's organizational performance. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM413 - Professional Development 413-3 Emergency Management Professional Development. This course teaches the student theories, principles, and approaches to emergency management. The student will complete 20 Independent Study courses as provided by the program coordinator for Public Safety Management. This course will provide the student with a FEMA Professional Development Certificate. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM414 - EMA Practicum 414-3 Emergency Management Practicum for Public Safety Professionals. Each student will undertake 80 hours of field time and observations with an approved Emergency Management Agency. The student may pick their own site or can use one of the school's approved sites from a pool of potential organizations. A power point presentation and final paper will be completed to receive credit for the course. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM415 - Homeland Security Defense 415-3 Homeland Security Defense. This course explores the boundaries of the 21st century security mission by examining the threats, the actors, and the organizational structures and resources required to defend the American homeland. It examines how we have shifted the emphasis to protect the US homeland from the defensive measures taken during the Cold War to both reactive and proactive actions against the wide variety of asymmetric threats posed to Global Terrorism. Vast array of topics are covered by necessity. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM416 - Domestic Terrorism 416-3 Domestic Terrorism and Extremist Groups. This course traces the history, emergence, and growth of domestic terrorist and extremist groups within the United States. Students will assess various groups' intentions, capabilities, and activities within contexts of and ramifications on political, national security, and legal paradigms. "Domestic Terrorism and Extremist Groups" traces the roots of domestic political violence and terrorism in the United States, and will expose the student to academic works concerning contemporary domestic extremists and the terrorist threat they may pose. The course will explore how a radical nature has continued to persist in isolated pockets throughout our Nation's history. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM417 - Strategic Design 417-3 Strategic Design and Budget for Emergency Response Agencies. Develops the student's understanding and skills of the budgeting process within public safety organizations. Examines the impact of effective project planning, operational planning, and evaluation on the performance of the public safety agency. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM418 - Governance and Strategy 418-3 Homeland Security and Emergency Management Governance/Administrative Strategies. This course examines the Public Safety Governance and Administration and the skills and understanding that are needed to perform such a role. This is done through research of the theories, philosophies, and concepts of executive leadership through the examination of the difference between management and leadership, organizational culture, and the leader-follower relationship. Not for graduate credit. Restricted to PSM major or consent of program coordinator.

PSM421 - Professional Development 421-3 Professional Development. Introduces students to the various elements involved in obtaining a position in their chosen fields. Topics included are: personal inventories, placement services, employment agencies, interviewing techniques, resumes, letters of application, references and employment tests. Each student will develop a portfolio, including personal and professional information related to career goals. Not for graduate credit.

PSM423 - Community Risk Reduction 423-3 Community Risk Reduction. This course examines the factors that shape fire risk and the tools for fire prevention, including risk reduction education, codes and standards, inspections and plans review, fire investigation, research, master planning, various types of influences and strategies. Not for graduate credit.

PSM425 - Governance 425-3 Fire and Emergency Services Governance and Administration. The role of upper level fire and emergency services managers with a focus on the significant areas of fire and emergency department management. Emphasis is placed on understanding of major issues facing fire and emergency services managers and the management of theories, concepts, and practices that apply to these issues. Not for graduate credit.

PSM450 - Analytical Approaches to Fire Protection 450-3 Analytical Approaches to Public Fire Protection. This course examines tools and techniques of rational decision making in fire departments, including databases, statistics, probability, decision analysis, utility modeling, resource allocation, cost benefit analysis, and linear programming. May be independent study. Not for graduate credit. Prerequisite: PSM 350 with a grade of C or better.

PSM500 - Terrorism 500-3 Terrorism, WMD, and Contemporary Issues. This course will begin by looking at the historical evolution of terrorism and weapons of mass destruction. We will analyze theories and mitigation, preparedness, and response tactics.

PSM501 - Administrative Law 501-3 Administrative Law. Administrative law is the law governing the powers, limits and operations of government administrative agencies, and the rights of individuals in dealing with those agencies. Much of this course is about two statutes and related court cases; The Administrative Procedure Act of 1946, governing federal agencies; and the Model State Administrative Procedures Act, governing Oklahoma and many other states.

PSM502 - Emergency Management 502-3 Emergency Management. This course examines historical and contemporary theories, principles, and practices of Emergency Management, particularly the all-hazards approach and the related processes of mitigation, preparedness, response and recovery. Using a case study approach, the course considers the evolution of Emergency Management and its practical application with government and private-sector institutions.

PSM503 - Public Policy/Ethics 503-3 Public Policy/Ethics. The focus of this course is on how public action takes place; what courses of action are available; and the implications, costs, and consequences of those actions. The Fire Service Executive of the future will require a more disciplined understanding of public policy. This course will encourage a familiarity with public issues that will be useful for the Fire Service Executives in making administrative or policy decisions.

PSM504 - Fiscal Management 504-3 Fiscal Financial Management. This advanced introduction to fundamentals of financial management emphasizes analysis of financial statements, organizational-departmental-divisional cash flows, taxes, the financial environment, bonds and their valuation, stocks and their valuation, and cost of capital.

PSM505 - Executive Leadership 505-3 Executive Leadership. This course includes leadership, multiple roles, decision making skills, influencing leaders, teaching leaders, storytelling, persuasion, succession planning, and evaluating.

PSM506 - Disaster Preparedness 506-3 Disaster Preparedness and Crisis Management. Students will receive the preparation necessary to uniquely manage and make critical decisions regarding a major incident or disaster. The course focuses on specialized decision-making processes involving analytical methods and information management. Interaction with other agencies and effective coordination of roles and efforts within a structured command system enables the crisis manager to make decisions in an unstructured environment.

PSM507 - Public Management 507-3 Public Management. The purpose of the course is to provide a survey of the theory and practice of management in public sector organizations. Emphasis will be given to a comparison of management in the public and private sector, management functions, and the context in which the public manager must perform the functions. Students must complete pre-class, in-class, and post-class assignments.

PSM508 - Homeland Security 508-3 Critical Issues in Homeland Security. This course examines the evolving nature of the Homeland Security enterprise by examining a number of contemporary topical issues and their immediate and long-term impact on Homeland Security policies and practices. Particular attention is paid to the role of the media, law, governmental and non-governmental organizations, and political entities at the federal, state, and local levels in determining and shaping Homeland Security policy/practice.

PSM509 - Strategic Planning 509-3 Strategic Planning. This course examines and defines the steps, concepts, theory, and value of comprehensive strategic planning. Students will participate in the formulation, financial development, operational management, and evaluation of currently utilized strategic plans and take part in the outline and design of a mock strategic plan.

PSM510 - Dispute Resolution 510-3 Dispute Resolution/Mediation/Negotiation. This course is about labor relations and employment disputes in the public sector and the various methods for resolving labor and personnel conflicts. Collective bargaining, arbitration, mediation, and other alternative dispute resolution methods will be applied to cases and simulation exercises relevant to government employees.

PSM511 - Critical Thinking 511-3 Critical Thinking and Decision Making. This course is an examination of knowledge and research as they pertain to public safety. Exploration of the relationship between creative and critical thinking, analysis of scientific methodology and logic, language and interpretation and their influence on public safety organizations.

PSM512 - Practicum 512-3 Practicum. Under the supervision and direction of a member of the faculty, students will undertake a project involving substantive participation in managing a major simulation, exercise, or drill involving multiple agencies and institutions. Student involvement will include planning, designing, developing, conducting, and evaluating the simulation or drill. Requires the approval of the Director of Graduate Studies for PSM.

PSM513 - Organizational Leadership 513-3 Organizational Leadership. This is the third course in the series of Leadership and Management. This course will provide the participant with a deeper understanding of knowledge, skills, and abilities for effective organizational leadership. Prerequisite: PSM 405.

PSM514 - Challenge of Leadership 514-3 Ethics and the Challenge of Leadership. This is the final course in the series of Leadership and Management. This course will provide the participant with a deeper understanding of personal and organizational ethics and the challenge of leadership. Prerequisite: PSM 513.

PSM515 - Special Topics 515-3 Special Topics in Public Safety Management. Specialized study for the investigation of management problems relating to the student's career objective. Studies of the management techniques as practiced in the profession. Topics may be suggested by both faculty and student. Restricted to approval of the Director of Graduate Studies for PSM.

PSM601 - Continuing Enrollment 601-1 Continuing Enrollment. For graduate students who have not finished their degree program and who are in the process of working on their thesis, research paper, or capstone project course (PSM 512). Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Psychology

The undergraduate program in psychology provides a broad general education in the tradition of the liberal arts. This tradition focuses on the development of wide-ranging interests in the arts, humanities, and social sciences, and on the development of critical and analytical thinking. A student who has earned a degree in one of the liberal arts, such as psychology, should be prepared to pursue lifelong learning and personal enrichment, as well as enter the work force or pursue advanced studies.

Graduates of the psychology program who have entered the work force immediately have found employment in a wide variety of settings, ranging from sales and personnel work in the business sector, to positions with the human service agencies of local, state, and federal governments. Graduates who have gone on to advanced study have successfully prepared themselves for professional careers in such fields as business, law, medicine, and psychology.

Students planning to apply to medical schools or law after completing a major in psychology should plan their programs of study in close consultation with the pre-medical or pre-law advisors on campus. Students planning to apply for admission to graduate study in psychology should plan their undergraduate program of study very carefully in consultation with advisors in the Department of Psychology. At least two years, and as many as six years, of graduate study are required for qualification as a professional psychologist.

Students who enter the University with a major in psychology should meet with the director of undergraduate studies in the Department of Psychology as soon as possible after arrival at the University in order to discuss their interests and plans of study. Students already at the University who wish to change to a major in psychology should contact the office of the director of undergraduate studies in the Department of Psychology in order to initiate the request for a change of major.

Bachelor of Arts Degree in Psychology, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements (PSYC 102 is required to satisfy social science and degree requirements)	39
College of Liberal Arts Academic Requirements - ENGL, Global Studies, and FL.	12
Requirements for Major in Psychology ¹	39-42
PSYC 102 (with a grade of C or better)	(3)
PSYC 202 (with a grade of C or better)	(1)
Any Math course that meets University Core Curriculum Requirements.	(3)
PSYC 211, PSYC 311 (passed with a grade of C or better, completion of 211 before senior year recommended)	8
Psychology Electives	29-30
Ten courses from the list below. At least six must be from Groups A, B, and C, with at least one course from each of these three groups. A minimum of three courses must be chosen at the 400-level from among the total offerings in the A, B, and C Groups and PSYC 489 in Group D.	

Degree Requirements	Credit Hours
Group A: PSYC 233, PSYC 237, PSYC 301, PSYC 303, PSYC 304, PSYC 305, PSYC 306, PSYC 307, PSYC 331, PSYC 333, PSYC 334, PSYC 431, PSYC 432, PSYC 440, PSYC 451, PSYC 461, PSYC 464, PSYC 470, CI 403	
Group B: PSYC 302, PSYC 309, PSYC 310, PSYC 312, PSYC 345, PSYC 402, PSYC 407, PSYC 409, PSYC 415, PSYC 416, PSYC 417, PSYC 419, PSYC 443, PSYC 445, PSYC 471	
Group C: PSYC 223, PSYC 314, PSYC 322, PSYC 323, PSYC 340, PSYC 411, PSYC 413, PSYC 420, PSYC 421, PSYC 425, PSYC 441, PSYC 465, PSYC 480	
Group D: PSYC 222, PSYC 389, PSYC 391, PSYC 392, PSYC 393, PSYC 394, PSYC 489, PSYC 499A, PSYC 499B, QUAN 402, MATH 282	
Of all credits that a student completes for PSYC 391, PSYC 392, PSYC 393, and PSYC 394, a maximum of three hours to count as one of the required 10 courses, 3 credits must be completed in PSYC 391, PSYC 392, PSYC 393, or PSYC 394 towards the major.	
Electives	29-30
Total	120

1 Courses in parenthesis will also count toward the 39 hours of University Core Curriculum requirements.

Psychology Major-Parent Training Specialization

Psychology majors intending to pursue careers as mental health counselors and therapists providing services to children and families may wish to pursue a specialization in Parent Training. The specialization includes course work focused on psychological development across the child and adolescent lifespan, child and adolescent psychopathology, training in helping skills, and evidence-based parenting strategies to promote positive relationships and develop effective disciplinary techniques.

Parent Training Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	12
Requirements for Major in Psychology	39-42

Degree Requirements	Credit Hours
PSYC 102 (with a grade of C or better)	(3)
PSYC 202 (with a grade of C or better) ¹	(1)
Any Math course that meets University Core Curriculum Requirements.	(3)
PSYC 211, PSYC 311 (passed with a grade of C or better, completion of PSYC 211 before senior year recommended)	8
Specialization requirements: PSYC 301, PSYC 451 or PSYC 391, PSYC 303, PSYC 432, PSYC 425, PSYC 441 or PSYC 393	18
Psychology Electives	12
Four additional courses from the list below. At least six courses for the Major in total must be from Groups A, B, and C, with at least one course from each of these three groups.	
Group A: PSYC 233, PSYC 237, PSYC 301, PSYC 303, PSYC 304, PSYC 305, PSYC 306, PSYC 307, PSYC 331, PSYC 333, PSYC 334, PSYC 431, PSYC 432, PSYC 440, PSYC 451, PSYC 461, PSYC 464, PSYC 470, CI 403	
Group B: PSYC 302, PSYC 309, PSYC 310, PSYC 312, PSYC 345, PSYC 402, PSYC 407, PSYC 409, PSYC 415, PSYC 416, PSYC 417, PSYC 419, PSYC 443, PSYC 445, PSYC 471	
Group C: PSYC 223, PSYC 314, PSYC 322, PSYC 323, PSYC 340, PSYC 411, PSYC 413, PSYC 420, PSYC 421, PSYC 441, PSYC 465, PSYC 480	
Group D: PSYC 222, PSYC 389, PSYC 391, PSYC 392, PSYC 393, PSYC 394, PSYC 489, PSYC 499A,B, QUAN 402, MATH 282	
Of all credits that a student completes for PSYC 391, PSYC 392, PSYC 393, and PSYC 394, a maximum of three hours to count as one of the required 10 courses, 3 credits must be completed in PSYC 391, PSYC 392, PSYC 393, or PSYC 394 towards the major.	
Electives	24-29
Total	120

¹ Courses in parenthesis will also count toward the 41 hours of University Core Curriculum requirements.

Psychology Minor

A minor in psychology requires the successful completion of at least 15 semester hours (five courses) in courses offered by the Department of Psychology and acceptable to the department for fulfillment of major requirements. PSYC 393 may not be included. A maximum of three hours from PSYC 391, 392 or 394 may count towards the minor. To count as one of the five required courses, three credits must be completed in 391, 392 or 394. Courses in other departments, such as the Department of Counseling, Quantitative Methods and Special Education, do not fulfill minor requirements. An average GPA of at least 2.0 in psychology courses must be successfully completed. Students completing a minor in psychology for purposes of qualifying to teach psychology in the State of Illinois must complete a minimum of 20 semester hours in psychology.

A student wishing to complete a minor in psychology must apply to the Department of Psychology for approval of the program of study for the minor. Without this approval the minor will not be officially listed on the student's transcript at the time of graduation. Application forms are available in the office of the director of undergraduate studies in psychology.

Courses taken at other institutions may count towards the minor only if those courses are acceptable for transfer credit in psychology. If credit is not accepted for transfer, a revised application for the minor must be approved. No more than two transfer courses can count toward a minor.

Neuroscience Minor

The Neuroscience Minor in Psychology is an interdisciplinary course of study that will provide students an understanding of the neural foundations underlying behavior. Students will be required to take coursework in different areas of neuroscience. In addition, students will be required to participate in ongoing research in a laboratory of their choosing. Students from many different majors will find the neuroscience courses addressing brain and behavior appealing and practical for their future professions. The students will come to understand that neuroscience spans levels from the molecular to the psychological in both humans and other animals.

A minor in neuroscience requires the successful completion of 19 semester hours in courses listed within the minor with a combined GPA of 2.0 or greater and a minimum GPA of 2.0 in both PSYC 302 and PSYC 415. The minor requires PSYC 302-3, PSYC 415-4, and PSYC 392-6 (13 credit hours combined) and six credit hours of approved elective courses (three credit hours must be at the 400 level). The list of approved elective courses will be routinely updated to include timely special topics courses. Please contact the Neuroscience Minor Coordinator for a current list of approved courses.

A student wishing to complete the neuroscience minor must apply to the Department of Psychology for approval of the program of study. Without this approval the minor will not be officially listed on the student's transcript at the time of graduation. Application forms are available in the Undergraduate Office in the Psychology department.

Courses taken at other institutions may apply towards the minor only if those courses are acceptable for transfer credit with the home department that offers the course. If credit is not accepted for transfer, a revised application for the minor must be approved. No more than two transfer courses can count toward the minor. No more than two courses can count towards both the Psychology major and the Neuroscience minor.

Neuroscience Minor requirements: PSYC 302 (C or better), PSYC 415 (C or better), PSYC 392 (six credit hours) Electives: Two additional courses from the list below; one course must be at the 400-level: PSYC 222, PSYC 304, PSYC 309, PSYC 310, PSYC 312, PSYC 314, PSYC 331, PSYC 416, PSYC 419, PSYC 489 (with approval of Neuroscience Minor Coordinator)

Transfer Credit

Credit for a course in psychology successfully completed at another accredited institution will be transferred to meet major or minor requirements in psychology at SIU Carbondale, subject to the following conditions:

1. The course number must bear a departmental prefix clearly indicating the course is a psychology course. Examples are PSYCH and PSYC.
2. The course must have covered substantially the same content material as a course currently offered at SIU to meet major requirements.
3. Credit for a course completed at a community or junior college is not transferable if the corresponding course at SIU is offered at the 400-level.
4. A grade point average of 2.0 or higher must have been earned in the course.
5. No more than five transfer courses can count for the major, and no more than two transfer courses can count toward a minor.
6. All transfers of credit to meet major or minor requirements in psychology must be explicitly approved by the department of psychology.

Courses from other institutions that do not meet these conditions may still be acceptable for elective credit to meet general University requirements. Students should consult their departmental or college advisor about such courses.

Senior Honors Program

A small number of students are selected each year for the honors program. Selection criteria are promising academic performance (3.0 overall grade point average and 3.25 psychology grade point average minimum), expressed interest, recommendation by departmental advisor, and capacity of program to take new students. Emphasis is on small seminar and individual research work by the student. Concurrent membership in the University Honors Program is strongly encouraged.

Psychology Courses

PSYC102 - Intro to Psychology 102-3 Introduction to Psychology. (University Core Curriculum) [IAI Course: S6 900] An examination of the variables related to the origins and modifications of human behavior using the viewpoints and techniques of contemporary psychology. Purchase of syllabus from local vendor required.

PSYC102H - Honors Intro to Psychology 102H-3 Honors Introduction to Psychology. (University Core Curriculum) [IAI Course: S6 900] For University Honors Program Members only. An examination of the variables related to the origins and modifications of human behavior using the viewpoints and techniques of contemporary psychology. Purchase of syllabus from local vendor required.

PSYC202 - Careers in Psychology 202-1 Careers in Psychology. A survey of fields of psychology from the perspective of available career options. Activities, required skills, rewards, and external constraints that characterize different career paths are practiced and discussed in relation to students' abilities and interests. Required of psychology majors, but open to any interested student. Prerequisite: None.

PSYC211 - Research Methods & Stats 211-4 Research Methods and Statistics. An introduction to the use of scientific methods in the study of behavior. Considerations of experimental design and methodology are integrated with the treatment of data analysis, interpretation of results and writing of a research report. Students will write a research proposal, conduct an experiment, and write a report of the experiment. This course satisfies the CoLA Writing-Across-the-Curriculum requirement. Lecture and laboratory. Prerequisite: MATH 101 or UCC Math; PSYC 102.

PSYC222 - Effects Recreational Drugs 222-3 Effects of Recreational Drugs on Mind and Body. Describes the physiological and psychological effects of substances used as recreational drugs for their psychoactive effects. Drugs discussed will include alcohol, amphetamines, cocaine and other stimulants, the barbiturates, methaqualone, the psychedelics, marijuana, tranquilizers, and the opiates. The purpose of the course is to provide the student with facts concerning the effects of these drugs and the potential for their abuse and physiological and psychological dependence.

PSYC223 - Workplace Diversity 223-3 Diversity in the Workplace. (University Core Curriculum) Examination of factors affecting the full utilization of women, racioethnic minorities, older workers, disabled workers and workers with nontraditional sexual orientations in the workplace. Individual processes, such as group identities, stereotyping, prejudice; group processes such as intergroup conflict; and organizational processes such as structural barriers and informal integration will be studied. The class utilizes a lecture and small discussion-section format with in-class, team, and individual exercises and projects.

PSYC233 - Psych-Gender-Diverse Context 233-3 Psychology of Gender in Diverse Context. (Same as WGSS 233) (University Core Curriculum) The course examines how gender affects all aspects of our lives at the individual, societal and cultural levels. It will cover psychological theories and topics related to gender, and will examine issues of diversity, such as race/ethnicity, class, sexuality, disability and age as they interact with gender.

PSYC237 - Psychology of Crime 237-3 Psychology of Crime. This course examines core concepts in psychology including the effects of biology, genetics, personality, development, learning, and cognition on behavior, with an application to criminal behavior. These theories will be used to analyze and explain criminal behavior depicted in a range of popular films.

PSYC301 - Child Psychology 301-3 Child Psychology. The biological and psychological development of the child from birth through puberty, and relevant research methods and results. Prerequisite: PSYC 102.

PSYC302 - Intro to Neuroscience 302-3 Introduction to Neuroscience. A survey of the role of biological processes in the behavior of humans and other species. Topics include structure and function of the nervous system, behavioral endocrinology, psychopharmacology, sensorimotor functions, sleep and waking, motivation and emotion, reinforcement, psychopathology, and learning and memory.

PSYC303 - Adolescence/Young Adulthood 303-3 Adolescence and Young Adulthood. Examines interrelated psychological, biological and social aspects of development during adolescence and young adulthood based on a life-span perspective of development. Prerequisite: PSYC 102.

PSYC304 - Adulthood and Aging 304-3 Adulthood and Aging. Examines the interrelated psychological, biological, and social aspects of development during middle and later adulthood based on a life-span perspective of development. Neuropsychological changes associated with normal and pathological aging will be considered. Prerequisite: PSYC 102.

PSYC305 - Psychology of Personality 305-3 Psychology of Personality. The inferred patterns underlying an individual's unique reactions to the environment. Investigates the motivation, development, and methods of changing these patterns, and how personality processes are studied. Prerequisite: PSYC 102.

PSYC306 - Positive Psychology 306-3 Positive Psychology and Human Strengths. An introduction to a contemporary movement seeking to understand the nature of human strengths, characteristics, resources, and aspirations. Surveys this emerging discipline, emphasizing theory and practical applications promoting human potential. Topics include happiness, creativity, confidence, wisdom, and intelligence among other aspects of optimal human functioning. Prerequisite: PSYC 102.

PSYC307 - Social Psychology 307-3 Social Psychology. Surveys contemporary issues such as love and friendship, shyness and loneliness, sexual attitudes and behavior, management of impressions made on others, attitude change and persuasion, leadership, group processes, aggression, and helping behavior. Prerequisite: PSYC 102.

PSYC308 - Psychology of Motivation 308-3 Psychology of Motivation. Examines variables affecting motivation in animals and humans. Topics include motivation based on cultural processes as well as those based on biological needs. Prerequisite: PSYC 102.

PSYC309 - Psychology of Learning 309-3 Psychology of Learning. Principles and laws of learning as derived from the classical and instrumental learning literature - acquisition, extinction, punishment, persistence, generalization, discrimination, motivation, drives, and incentives. Prerequisite: PSYC 102.

PSYC310 - Cognitive Psychology 310-3 Cognitive Psychology. A survey of theory and research on attention, memory, language behavior, and problem solving. The principal orientation will be the information processing approach to the study of behavior. Prerequisite: PSYC 102.

PSYC311 - Adv Methods & Statistics 311-4 Advanced Research Methods and Statistics. A continued exploration of the use of scientific methods in the study of behavior. Topics include field and other quasi-experimental methods appropriate for use in settings in which the researcher can exercise minimal control and manipulation. This course satisfies the CoLA Writing-Across-the-Curriculum requirement. Lecture and laboratory. Prerequisite: PSYC 211.

PSYC312 - Sensation and Perception 312-3 Sensation and Perception. Surveys the structure and function of the sensory organs as well as the perceptual experiences associated with these systems (e.g., color perception, speech perception). Examines physical, neural, and chemical mechanisms responsible for sensory and perceptual experience. Prerequisite: PSYC 102.

PSYC314 - The Brain and Emotion 314-3 The Brain and Emotion. Great advances have been made in understanding how the brain works in areas such as visual processing and memory. Recently, brain researchers have begun to turn their attention towards understanding emotions, given the importance of emotions to human functioning. This course examines the relationship between the brain and emotions. Prerequisite: PSYC 102.

PSYC322 - Personnel Psychology 322-3 Personnel Psychology. (Same as MGMT 385) Examines the methods of psychology used in the selection, placement, and evaluation of employees. Government regulations requiring equal opportunity, psychological measurement concepts, and employee performance evaluation in the work environment are covered. Prerequisite: PSYC 102.

PSYC323 - Organizational Psychology 323-3 Organizational Psychology. Applied human relations at work focusing on interpersonal and small-group behavior. Covers effective communication, employee morale, motivation, behavior modification, leadership and group dynamics, human relations and the law, and stress and coping. Prerequisite: PSYC 102.

PSYC331 - Abnormal Psychology 331-3 Abnormal Psychology. An introduction to the major forms of psychopathology (e.g., depression, schizophrenia, anxiety disorders). Topics include the symptomatology of different mental disorders, their etiology from psychological, biological, and sociocultural perspectives, and issues pertaining to diagnosis and treatment. Prerequisite: PSYC 102.

PSYC333 - Psychology of Women 333-3 Psychology of Women. (Same as WGSS 341) An examination of empirical evidence on the biological, psychological, and social functioning of women, describing women's roles, the genetic versus social determinants of women's behavior, and the implications for women's potential. Prerequisite: PSYC 102 or consent of instructor.

PSYC334 - Psyc African Amer Experience 334-4 Psychology of African American Experience. (Same as AFR 334) Course examines psychological characteristics of people of African descent, using an Africentric conceptual model. Theoretical models will be critiqued and empirical data will be examined. Selected issues include: critiques of research methodologies involving African descended population; African American identities and personality development, psychopathology, and cognitive development issues (i.e., language). Special approval needed from the instructor.

PSYC340 - Intro Clinical/Counseling Psyc 340-3 Introduction to Clinical and Counseling Psychology. Provides an in-depth understanding of the nature of two major specialties in the field of psychology: clinical and counseling psychology. Students will examine the historical origins of the two areas, study their major theoretical definitions, compare and contrast the areas, and sample empirical and practitioner activities unique to them. Prerequisite: PSYC 102.

PSYC345 - Second Language Acquisition 345-3 Second Language Acquisition. (Same as LING 340) Introduction to key concepts and major theoretical and methodological issues in SLA research. Examines major developments in SLA in the areas of phonology, morphology, lexis, syntax, semantics, pragmatics and discourse and provides students with hands-on experience in describing and accounting for L2 data. An opportunity to design and implement a data-based study in an area of interest to students. Prerequisite: PSYC 102.

PSYC389 - Seminar: Selected Topics 389-1 to 9 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. May be repeated as topics vary. Special approval needed from the instructor.

PSYC390 - Neuroscience Research 390-3 Individual Neuroscience Research. Individual neuroscience research under the supervision of a member of the faculty. For the neuroscience minor two semesters of PSYC 390 are required. Special approval needed from the instructor and research supervisor.

PSYC391 - Individual Project 391-1 to 9 Individual Project. Individual study, research or experience under the supervision of a member of the Department of Psychology faculty. Of all credits that a student completes for PSYC 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major. Mandatory Pass/Fail. Special approval needed from the instructor.

PSYC392 - Individual Project 392-1 to 9 Individual Project. Individual study, research or experience under the supervision of a member of the Department of Psychology faculty. For use in those cases where the faculty member deems a graded course to be appropriate. Of all credits that a student completes for PSYC 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major. Special approval needed from the instructor.

PSYC393 - Preprofessional Practicum 393-1 to 9 Preprofessional Practicum. Directed experience in human services or other activities relevant to psychology at a public or private institution, agency, or organization. The experience is on a volunteer basis. Enrollment must be approved in advance by the director of undergraduate field placements for the Department of Psychology. Mandatory Pass/Fail. Special approval needed from the instructor.

PSYC394 - Ugrad Prac Col Teach Psych 394-1 to 9 Undergraduate Practicum in the College Teaching of Psychology. Supervised practicum in the college teaching of psychology for selected senior psychology majors. Of all credits that a student completes for Psychology 391, 392, 393, and 394, a maximum of three hours from any or all of these courses may count towards the major. Restricted to senior psychology major. Special approval needed from the instructor.

PSYC402 - Psychology and Medicine 402-3 Psychology and Medicine. This course is an extensive review of psychology concepts as they relate to medicine and medical training. The overall goal of this course is to provide review of psychology concepts as they appear in the new form of the MCAT.

PSYC407 - Theoretical Issues in Learning 407-3 Theoretical Issues in Learning. An introduction to the major theoretical issues in learning and their importance. A brief review of the history of such problems will be followed by a summary of the current research concerning these issues. Traditional figures in learning theory will be considered within the context of their positions on specific questions. Prerequisite: PSYC 211 and PSYC 309 or equivalent or graduate status.

PSYC409 - History/Systems of Psychology 409-3 History and Systems of Psychology. A review of the conceptual and empirical antecedents of modern psychology. Prerequisite: PSYC 211. Restricted to senior status, or graduate status.

PSYC411 - Applied Learning 411-3 Applied Learning. An in-depth coverage of practical problems concerned with training to which the principles of learning derived from pure laboratory investigations can be applied. Prerequisite: PSYC 211 and PSYC 309 or graduate status.

PSYC415 - Psychopharmacology 415-4 Psychopharmacology. A survey of the effects of drugs on the normal and abnormal behavior of humans and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous and endocrine systems. Prerequisite: PSYC 302 or graduate status.

PSYC416 - Recovery of Function 416-3 Recovery of Function Following Brain Damage. A survey of experimental animal and human clinical research as they relate to behavioral recovery following damage in the central nervous system. Recent theories and literature are stressed. Prerequisite: PSYC 302 or consent of instructor, or graduate status.

PSYC417 - Neuropsych Learning & Memory 417-3 Neuropsychology of Learning and Memory. This course will serve as an advanced discussion of research related to the neuroscience of how learning and

memory operate. Topics will include how the principles surrounding learning and memory are explained in terms of cellular, neural systems, and behavioral levels.

PSYC419 - Behavioral Genetics 419-3 Behavioral Genetics. Provides an overview of the experimental and quantitative methods used in studying behavioral differences associated with genetic variables. Elementary aspects of genetics will be included in the course, which will examine several aspects of both human and nonhuman behavior. Prerequisite: PSYC 211 or consent of instructor, or graduate status.

PSYC420 - Industrial/Organiztnl Psych 420-3 Industrial/Organizational Psychology. Topics in industrial and organizational psychology; applications of psychology to human resource management, such as job analysis, performance appraisal systems, personnel selection and training. Prerequisite: PSYC 211.

PSYC421 - Tests & Measurements 421-3 Psychological Tests and Measurements. Introduction to measurement theory and test development. Detailed coverage of selected tests from such areas as intelligence, aptitude and personality, and the use of psychological tests in various settings. Prerequisite: PSYC 211 or graduate status.

PSYC425 - Psychology of Parenting 425-3 Psychology of Positive Parenting. This course will provide a comprehensive overview of key concepts in parenting, the nature of parenting across the lifespan and specific challenges for parents with children in each of the developmental stages. We will discuss effective strategies for addressing these challenges in addition to programs and approaches that demonstrate a strong evidence base. Special focus will additionally be given to diversity issues, parenting in high risk families and in families with exceptional children. Prerequisites: PSYC 102, PSYC 301 with grades of C or better.

PSYC431 - Advanced Psychopathology 431-3 Advanced Psychopathology. An advanced presentation of theoretical and empirical issues in contemporary psychopathology research. Explores the role empirical research plays in understanding the features of major psychological disorders and their treatment. Provides a broad understanding of the many factors that contribute to the development and maintenance of abnormal behaviors. Prerequisite: PSYC 211, PSYC 331 or consent of instructor or graduate status.

PSYC432 - Childhood Psychopathology 432-3 Psychopathology of Childhood. An extensive review and systematic evaluation of theories and research pertaining to the behavior disorders of childhood. Emphasis will be upon empirical data and the implications of these data for the classification and treatment of these disorders. Prerequisite: PSYC 211, PSYC 301, PSYC 311 or graduate status.

PSYC440 - Advanced Personality 440-3 Advanced Personality. Advanced presentation of theoretical and research issues related to current issues in personality psychology. The overarching focus of the course is presentation and discussion of a scientific approach to understanding what personality is, how it can be measured, how it develops and how it relates to various aspects of individual functioning. Prerequisite: PSYC 211 or consent of instructor.

PSYC441 - Helping Skills Clin/Couns Psyc 441-3 Helping Skills in Clinical and Counseling Psychology. (Same as COUN 493) Provides systematic training in helping skills for students considering clinical or counseling psychology as a career. Students learn to identify and demonstrate such skills as paraphrasing, reflection of feeling, interpretation, and confrontation, and will use them in practice situations. Prerequisite: PSYC 211 and PSYC 340. Restricted to senior standing in psychology.

PSYC443 - Bilingualism 443-3 Bilingualism. (Same as LING 443) Examines the linguistic, psycholinguistic, sociolinguistic and educational aspects of bilingualism, particularly as pertaining to the care and education of bilingual children. Useful for teachers, speech therapists, doctors, psychologists, counselors, and others working with bilinguals. Practical applications and data-based research. Prerequisite: PSYC 211.

PSYC445 - Psycholinguistics 445-3 Psycholinguistics. (Same as LING 445) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems and language of the brain. Prerequisite: PSYC 211.

PSYC451 - Advanced Child Psychology 451-3 Advanced Child Psychology. An assessment of concepts, methods, and research techniques within selected topic areas of developmental psychology. Prerequisite: PSYC 211 and PSYC 301, or graduate status.

PSYC461 - Advanced Social Psychology 461-3 Advanced Social Psychology. Critical examination of contemporary theories and research in social psychology. Practice in application of scientific findings to real-life problems of individuals and groups. Issues treated in depth are chosen for relevance to student's personal needs and career interests. Prerequisite: PSYC 211 and PSYC 307 or graduate status.

PSYC470 - Psych of Race & Racism 470-3 Psychology of Race and Racism. (Same as AFR 472) This course reviews the history and evolution of the construct of race as a psychological phenomenon. While the course will be largely psychological in nature, the pervasiveness of race in practically every sphere of life necessitates a multidisciplinary approach. The course will emphasize a theoretical and conceptual approach toward understanding the psychology of racialized thinking. Prerequisite: PSYC 211.

PSYC471 - Judgment & Decision Making 471-3 Judgment and Decision Making. A survey of the academic field of judgment and decision making, its major methods, theories, results, and controversies. We will examine the generality of experimental results across various domains including gambling, clinical prediction, perception of randomness, and medical decision making. Prerequisite: PSYC 211 or graduate status.

PSYC480 - Effective Correctional Practics 480-3 Effective Correctional Practices. (Same as CCJ 480) Exploration and evaluation of correctional intervention strategies developed for the sentencing of adjudicated persons. Particular emphasis on examining empirical research literature on effective correctional practices, including programs currently implemented in institutional setting, alternatives to institutional corrections, and community based programs. Prerequisite: PSYC 211.

PSYC489 - Seminar: Selected Topics 489-1 to 12 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: PSYC 211. Special approval needed from the instructor.

PSYC499A - Senior Honors in Psychology 499A-3 Senior Honors in Psychology. Intensive study in selective areas for students qualified for honors work in psychology. A research paper or equivalent will be required. Not for graduate credit. Prerequisite: PSYC 211. Special approval needed from the instructor.

PSYC499B - Senior Honors in Psychology 499B-3 Senior Honors in Psychology. Intensive study in selective areas for students qualified for honors work in psychology. A research paper or equivalent will be required. Not for graduate credit. Prerequisite: PSYC 211. Special approval needed from the instructor.

PSYC503 - Individual Differences 503-3 Individual Differences. Reviews the reliable and theoretically significant individual and group difference that have been revealed by research in the behavioral sciences. Examines differences in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as sex, race and socioeconomic status. Restricted to graduate status in Psychology.

PSYC507 - Advanced Social Psychology 507-3 Advanced Social Psychology. Review of new and traditional theories and research findings within social psychology. Provides an overview of major areas of study and consideration of more recent topics of study. Topics include (but are not limited to) cultural and evolutionary perspectives in social psychology, motivation, social cognition, self-knowledge, person-perception, cognitive consistency, attitudes, intergroup relationships, stereotyping, and group behavior. Restricted to graduate standing.

PSYC509 - History & Systems of Psyc 509-3 History and Systems of Psychology. A review of conceptual and empirical antecedents of modern psychology. Students research and summarize topics on 20th Century systematic developments. Restricted to graduate status in Psychology.

PSYC511 - Human Learning & Memory 511-3 Human Learning and Memory. Reviews principles of learning and memory. Covers both human and animal research literature from experimental and theoretical perspectives.

PSYC512 - Sensory Processing 512-3 Sensory Processing. A study of the structure and functions of the sense organs. Emphasizes the psychological data, which describe the function of these organs.

PSYC513 - Human Psychophysiology 513-3 Human Psychophysiology. Physiology, instrumentation, and methodology of psychophysiological measurements including both autonomic and central nervous systems. Attention will be given to basic and applied research. Restricted to graduate standing.

PSYC514 - Neurobiological Bases Behavior 514-4 Neurobiological Bases of Behavior. An advanced study of neuroanatomical and neurophysiological principles underlying behavior. Topics covered include structure and function of neurons, synaptic transmission, sensory processing, motor control, development and plasticity of the nervous system and other current topics in neurobiology. Prerequisite: PSYC 302 or equivalent. Special approval needed from the instructor.

PSYC515 - Theory & Res Cognitive Psyc 515-3 Theory and Research in Cognitive Psychology. A detailed survey of current studies of attention, short-term memory and thought processes. Special approval needed from the instructor.

PSYC516 - Human Clinical Neuroanatomy 516-4 Human Clinical Neuroanatomy. Basic functioning of the nervous system, detailed gross anatomy and dissection of the human brain, functional disorders following brain damage, noninvasive cranial nerve examination. The course includes a lab component. Restricted to graduate standing.

PSYC517 - Aging, Memory & Cognition 517-3 Aging, Memory and Cognition. (Same as GRON 517) A detailed survey of current methodology, research and theory dealing with cognitive and memory processes in later adulthood. Topics covered include attention, memory, reasoning and problem solving, language processing and inference and age-associated pathologies affecting cognition and memory. Special approval needed from the instructor.

PSYC518 - Psychopharmacology & Behavior 518-4 Psychopharmacology and Behavior. A detailed survey of the effects of drugs on the normal and abnormal behaviors of human and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous system, endocrine system and behavior pathology. Students review and summarize original research in the area. Restricted to graduate status in psychology or permission of instructor.

PSYC519 - Research on Indiv Differences 519-3 Research on Individual Differences. Reviews the reliable and theoretically significant individual and group differences that have been revealed by research in the behavioral sciences. Examines difference in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as gender, race and socioeconomic status. Students review and summarize original research in the area and lecture on that topic. Restricted to graduate status in psychology or permission of instructor.

PSYC520 - Apps Psyc Learning & Memory 520-3 Applications of the Psychology of Learning and Memory. A survey of the theories and methods of training that have resulted from research in the areas of learning and memory. Students will review some of the very recent methods as well as those that are better developed. Practice will be provided. Prerequisite: PSYC 309 or consent of instructor.

PSYC522 - Experimental Design & Analysis 522-4 Experimental Design and Analysis. (Same as QUAN 508) In-depth coverage of the rationale underlying the design and analysis of complex experimental designs used in psychological research. Restricted to Psychology graduate students.

PSYC523 - Res Methods: Appl & Prof Psyc 523-3 Research Methods in Applied & Professional Psychology. Discussion of problems in experimental and quasi-experimental design, control and analysis that are encountered by researchers and professional psychology. The course covers critical evaluation of internal, construct, and external validity and the application of randomized and non-randomized designs for causal inference. Passive-observational and qualitative designs are covered at the instructor's discretion. Examples of current research practice from applied, counseling and clinical psychology are reviewed. Restricted to graduate status in psychology or consent of instructor.

PSYC524 - Multivariate Methods Psych 524-4 Multivariate Methods of Psychology. Detailed treatment of multiple-factor analysis and multiple regression analysis. Also includes introduction to other multivariate

methods such as discriminant analysis and cluster analysis. Prerequisite: PSYC 522. Restricted to Psychology graduate student.

PSYC525 - Psychological Measurement 525-3 Psychological Measurement. (Same as QUAN 531) Intensive coverage of such topics in test theory as item analysis, reliability, validity, problems of weighting in differential prediction, and problems in selection and classification. Prerequisite: PSYC 421 or consent of instructor.

PSYC526 - Research in Counseling Psyc 526-3 Research in Counseling Psychology. This course provides a basic foundation of research skills. The course includes extensive reading in counseling psychology research and coverage of research design, specific research techniques, technical writing and research ethics.

PSYC527 - Theory & Methods Scaling 527-3 Theory and Methods of Scaling. The theory of measurement, by which observed behavioral events can be translated into quantitative scales of psychological constructs. The course will cover several axiom systems that form the foundation for psychological measurement, including representation in more than one dimension. Prerequisite: PSYC 522. Restricted to graduate standing.

PSYC528 - Decision Analysis Techniques 528-3 Decision Analysis: Techniques for Aiding Decisions. A survey of formal methods for making decisions, based on subjective probability and multiattribute utility assessments. Students will be given practice in using methods of decision analysis for solving decision problems. Special approval needed from the instructor.

PSYC529 - Advanced Multivariate Stats 529-3 Advanced Applied Multivariate Statistics. This course will introduce multivariate analyses such as structural equation modeling, hierarchical linear modeling and latent curve analysis, with additional topics addressed dependent upon student interest (e.g., missing data, categorical and/or dyadic data analysis). After presenting conceptual information on latent variable analysis, the course will focus on the application of advanced analytic techniques. Understanding of correlation and regression is essential for this course. Prerequisite: graduate level multivariate statistics course.

PSYC530 - Theories of Couns/Psytherapy 530-3 Theories of Counseling and Psychotherapy. A survey of the major theories of personality and systems of counseling and psychotherapy. Stresses relationship between theory and application. Special approval needed from the instructor.

PSYC531 - Commun & Inst Field Placement 531-3 to 6 Community and Institutional Field Placement. Introduction to a variety of area agencies with each student affiliating with two agencies at least two days per week. Individual and group supervision with special attention to the variety of clinically related problems and approaches to treatment encountered in the course of their activities. Required for clinical students. Restricted to psychology graduate in clinical or counseling.

PSYC532 - Devel Pers & Psychopathology 532-3 Development, Personality & Psychopathology. An extensive review and systematic evaluation of theories and research pertaining to developmental processes as they influence temperament, personality and psychopathology with emphasis on normal and disordered pathways. Restricted to graduate status or consent of instructor.

PSYC533 - Exper Apprs: Psychopathology 533-2 Experimental Approaches to Psychopathology. An examination of the research literature on several issues in clinical psychopathology. Restricted to psychology graduate or consent of instructor.

PSYC534 - Cogn & Behavior Therapy 534-3 Cognitive and Behavior Therapy. An extensive review and systematic evaluation of clinical methods including desensitization, assertion training, cognitive restructuring, and conditioning strategies. Restricted to graduate status (clinical/counseling) or consent of instructor.

PSYC535 - Psychopathology 535-3 Psychopathology. Surveys the following issues and content areas in psychopathology: categorical and dimensional models and definitions of psychopathology, anxiety and related disorders, depressive disorders, schizophrenia spectrum and psychotic disorders, substance-related disorders, and personality disorders. Also reviews diagnostic procedures, including

differential diagnosis. This course required for all clinical students within their first two years. Restricted to psychology graduate students or consent of instructor.

PSYC536 - Fundamentals of Counseling 536-4 Fundamentals of Counseling. An introduction to counseling psychology as a professional specialty. Professional and ethical issues in the training and work of counseling psychologists are examined. Basic counseling skills are acquired through practice interviewing. Restricted to psychology graduate student or consent of instructor.

PSYC537 - Adv Treatment Planning 537-3 Advanced Treatment Planning and Implementation. An advanced level course designed to help students grapple with the more complex issues of psychological practice in today's health care system. Students will practice comprehensive treatment planning and outcome management that is theoretically driven and evidence-based. Students will also gain specific knowledge and skills related to delivering therapy in a culturally relevant and time-limited manner. Restricted to psychology graduate status.

PSYC538 - Theory/Practice Group Facilitatn 538-3 Theory and Practice of Group Facilitation. Didactic presentation of group dynamics and group counseling/therapy. Restricted to Psychology graduate status.

PSYC539 - Experimental Psychotherapy 539-3 Experimental Approaches to Psychotherapy. A review and evaluation of empirical research related to the amelioration of maladjustment. Emphasis is on measurement and methodological problems. Prerequisite: PSYC 530 or consent of instructor.

PSYC540 - Psychological Assessment 540-4 Psychological Assessment. Basic theory, practice and research on psychological assessment with emphasis on objective, validated measures of intelligence and personality. Includes one hour laboratory section. Restricted to psychology graduate status. Course Fee: \$100.

PSYC542 - Prin & Prob-Personality Assmt 542-3 Principles and Problems in Personality Assessment. Critical review of research related to such topics as scale construction strategies, response styles, trait attribution, judgmental accuracy, and judgmental processes. Special approval needed from the instructor.

PSYC543 - Adv Child Assessment 543-3 Advanced Child Assessment. Basic theory, research, and practice in the psychological assessment of children's learning and emotional problems. Prerequisite: PSYC 540. Restricted to psychology graduate standing. Special approval needed from the instructor.

PSYC544 - Adv Adult Assessment 544-3 Advanced Adult Assessment. Practical experience at conceptualizing psychopathology from a standard clinical test battery and in writing clinically meaningful test reports. Prerequisite: PSYC 540. Restricted to Psychology graduate standing. Special approval needed from the instructor.

PSYC545 - Intro Neuropsych Assessment 545-3 Introduction to Neuropsychological Assessment. Overview of the development of neuropsychology from signs to test batteries and methodology. Prerequisite: PSYC 540. Restricted to psychology graduate status. Special approval needed from the instructor.

PSYC546 - Human Clinical Neuropsychology 546-3 Human Clinical Neuropsychology. This course will familiarize students with the basic concepts, empirical foundations, and clinical applications of human clinical neuropsychology. The neurobehavioral manifestations of both acute and chronic conditions will be covered. Prerequisite: PSYC 540. Restricted to psychology graduate status. Special approval needed from the instructor.

PSYC548 - Vocational Psyc & Career Dev 548-3 Vocational Psychology and Career Development. Introduces students to vocational psychology as an area of academic inquiry. Topics include theories of career development, occupational information, career assessment, research issues, and career counseling techniques. Restricted to graduate standing.

PSYC549 - Behavioral Assessment 549-3 Behavioral Assessment. A didactic and practicum course concerned with principles and methods of behavioral assessment including behavioral interviewing, questionnaires, self-monitoring, naturalistic and structured observation and psychophysiological assessment.

PSYC550 - Psych Construction of Gender 550-3 The Psychological Construction of Gender. (See WGSS 550)

PSYC552 - Social Development 552-3 Social Development. Advanced consideration of current methods, research, and theory in development psychology with emphasis on infancy through adolescence. Includes integration of social, developmental, and biological aspects of child development, with particular attention paid to social and personality development and parent-child relations. Special approval needed from the instructor.

PSYC553 - Cross-Cultural Psychology 553-3 Cross-Cultural Psychology. This course helps students increase their awareness of the importance of cross-cultural differences in psychology. The course also integrates theory and research from different fields of psychology (e.g., biological, social, developmental, cognitive, psychopathology) from the cross-cultural perspective. Special approval needed from the instructor.

PSYC554 - Life-Span Developmental Psych 554-3 Life-Span Developmental Psychology. Theories of human development, as well as current research trends and methodologies, will be examined from a life-span perspective.

PSYC555 - Language and Cognition 555-3 Language and Cognition. Current theoretical problems in language and cognitive developments are investigated from the perspective of psychology, physiology, linguistics and computer simulations. Special approval needed from the instructor.

PSYC556 - Child Psychotherapy 556-3 Child Psychotherapy. Survey and analysis of traditional and contemporary approaches to individual child psychotherapy. Includes psychodynamic, humanistic-nondirective, hypnotherapy-imagery and other perspectives as well as therapy outcome research. Restricted to psychology graduate status. Special approval needed from the instructor.

PSYC557 - Family Psychotherapy 557-3 Family Psychotherapy. Investigation of the psychosocial interior of the family. Evolution and dynamics of interaction in families. Study of the methods of therapeutic intervention with families. Restricted to psychology graduate status. Special approval needed from the instructor.

PSYC558 - Personality & Soci Dev Adults 558-3 Personality and Social Development of Adults. A lecture-discussion course which presents the major theoretical and empirical literature in the area of adult personality and social development. Students are encouraged to apply normal developmental constructs to understand individual adults, as well as to gain competence in research methods in this area. Restricted to psychology graduate student or consent of instructor.

PSYC559 - Behavioral Child Therapy 559-3 Behavioral Child Therapy. Survey and analysis of behavioral and cognitive-behavioral approaches to the treatment of child psychopathology. Restricted to psychology graduate status. Special approval needed from the instructor.

PSYC560 - Couples/Marital Therapy 560-3 Couples and Marital Therapy. This course is designed to provide doctoral level psychology students the basic theoretical and technical background necessary before beginning to work in supervised marital/couples therapy clinical practice. Restricted to psychology graduate status or consent of instructor.

PSYC561 - Supervision of Psychotherapy 561-3 Supervision of Psychotherapy. Presentation of the theories and techniques of psychotherapy supervision, as well as cultural, ethical and legal issues in supervision. Students will also provide individual supervision to beginning counselors and receive supervision of their supervision. Restricted to psychology graduate status.

PSYC562 - Adolescent Clinical Psychology 562-3 Adolescent Clinical Psychology. Discusses specific characteristics of adolescent psychopathology, techniques for psychological assessment, common and empirically supported treatment approaches. Restricted to psychology graduate student or consent of instructor.

PSYC563 - Resrch Attitudes & Persuasion 563-3 Research in Attitudes and Persuasion. Detailed review of current theory and research in social psychology of attitude formation and change and of

persuasion techniques. Students will develop literature reviews and conduct original research. Restricted to graduate status in psychology or consent of instructor.

PSYC564 - Prog Eval:Exper & Quasi Apprch 564-3 Program Evaluation: Experimental and Quasi-Experimental Approaches. Review of experimental and quasi-experimental designs for assessment of program impact. Discussion of design, logistic, and political implementation problems. Detailed examination of a number of attempts at program evaluation. Prerequisite: 500-level statistics course.

PSYC565 - Research Organizational Psych 565-3 Research in Organizational Psychology. In depth examination of theoretical and research literature in organizational psychology. Topics include, but are not limited to, theory and research literature on work motivation, job attitudes, leadership, group processes, organizational stress and women and minorities in the work place. Restricted to graduate status in psychology or permission of instructor.

PSYC566 - Health Psychology 566-3 Health Psychology. This course will explore the interface between psychological theory and research and health issues including health behavior, prevention and intervention, stress and coping, management of chronic and terminal illness, health care service utilization, and patient/provider interaction. Graduate standing required.

PSYC569 - Applied Research Consultants 569-1 to 3 Applied Research Consultants. Consulting firm which provides applied research experiences for advanced graduate students on planning, data gathering, evaluation, and decision making projects for units of university and area agencies and businesses. Students exercise decision making power in all aspects of the firm: project solicitation, fee setting, expenditures. Graded S/U only. Prerequisite: PSYC 571 or consent of instructor.

PSYC570 - Early Cognitive Development 570-3 Early Cognitive Development. Surveys the major theories, methods, and data in the field of human cognitive development, with a particular emphasis on the qualitative changes that occur during infancy and early childhood. Special approval needed from the instructor.

PSYC571 - Prosem in Applied Exper Psych 571-6 (2,2,2) Proseminar in Applied Experimental Psychology. A survey of the problem areas to which applied experimental psychology is applicable and of the principal methods employed by applied experimental psychologists. Integration of these approaches within a comprehensive metatheory. Case studies apply the information to actual and simulated application problems. Graded S/U.

PSYC572 - Prosem Brain & Cognitive Sci 572-1 Proseminar in Brain and Cognitive Sciences. Discussions of various research topics within the brain and cognitive sciences. Presentations of current research by faculty and graduate students.

PSYC573 - Personnel Psychology 573-3 Personnel Psychology. This course will give an in-depth treatment of modern theories and practice of personnel selection. Students will learn about the psychological variables used in personnel selection as well as how to apply these findings in modern organizations. Course content will include individual difference traits related to subsequent job performance, methods used to select employees, personnel selection practices, adverse impact, and other related topics. Restricted to graduate student in Psychology or instructor's permission.

PSYC574 - Groups and Teams 574-3 The Psychology of Groups and Teams. This course examines the good, the bad and the ugly with groups and teams, with an emphasis on group dynamics and performance. Topics include: leadership, group composition and performance, group decision-making, ostracism, minority influence, groups and technology, and creativity. Restricted to graduate student in psychology or permission of instructor.

PSYC575 - Computational Modeling 575-3 Computational Modeling. Introduction to computational modeling of cognitive processes. Covers theoretical and methodological issues in computational simulations of psychological behavior. Lectures and practical simulation assignments. Special approval needed from the instructor.

PSYC577 - Second Language Acquisition 577-3 Second Language Acquisition. (Same as LING 541) Introduction to key concepts and major theoretical and methodological issues in second language acquisition. Major developments in SLA in the areas of phonology, morphology, lexis, syntax, semantics

and discourse and provides students with hands-on experience in describing and accounting for second language data. Prerequisite: Introduction to linguistics or consent of instructor.

PSYC578 - Bilingualism 578-3 Bilingualism. (Same as LING 543) A comprehensive introduction to the study of bilingualism. Course will examine the linguistics, psycholinguistic, sociolinguistic and educational aspects of bilingualism, particularly as pertaining to the care and education of bilingual children. Prerequisite: one previous course in linguistics or consent of instructor.

PSYC580 - Cognition Affect & Behavior 580-3 Cognition, Affect and Behavior. Provides an integrative exploration of the relations among cognition, affect and behavior (CAB). Foundations of this integration are provided, including examination of basic principles, experimental evidence, and biological bases. Emphases will be placed on learning, stability, self-regulation, and change of CAB, and relationships to individual differences, personality, psychopathology, and genetically influenced temperaments. Restricted to psychology graduate student status or instructor permission.

PSYC581 - Developmental Psychopathology 581-3 Developmental Psychopathology. An extensive review and systematic evaluation of theories and research pertaining to developmental psychopathology. Emphasis will be on empirical data and the implications of these data for the classification and treatment of disorders. Restricted to graduate status. Special approval needed from the instructor.

PSYC584 - Pediatric Psychology 584-3 Pediatric Psychology. This course is an introduction to pediatric psychology. Clinical and research applications to working with youth and their families in medical settings will be covered. Topics include clinical roles and settings in pediatric psychology, pediatric medical and developmental conditions and role of the pediatric psychologist, consultation-liaison in the pediatric medical setting, assessment and intervention approaches for children with medical conditions, and ethical issues in pediatric psychology. Prerequisite: PSYC 556 or PSYC 559. Restricted to psychology graduate student status or instructor permission.

PSYC585 - Advanced Seminar 585-1 to 18 Advanced Seminar. Seminars of varied content for advanced students. Special approval needed from the instructor.

PSYC586 - Proseminar Clinical Psychology 586-1 Proseminar in Clinical Psychology. Required seminar for first-year graduate students enrolled in the Clinical Psychology program. Graded S/U. Restricted to psychology graduate status.

PSYC587 - Systems, Admin, & Advocacy 587-1 Advanced Professional Seminar in Psychology: Systems, Administration, and Advocacy. The purpose of this professional seminar is to provide students with an opportunity to consider and consolidate their various training, experiences related to interdisciplinary systems, management and administration, and advocacy. These core competencies are relevant to all professional psychology work settings. Students will bring in case examples from their applied work, professional meetings, and personal reading. Learning will be facilitated via readings, case examples, and discussion. Restricted to Doctoral Student in Counseling or Clinical Psychology.

PSYC590 - Readings in Psychology 590-1 to 12 Readings in Psychology. Readings in selected topics in psychology under staff supervision. Graded S/U only. Special approval needed from the instructor.

PSYC591 - Readings on Culture/Diversity 591-3 Readings on Culture and Diversity. Readings on multicultural and diversity issues in Clinical Psychology, which may include, but not necessarily be limited to issues of racial and ethnic differences, gender, sexual orientation, socioeconomic status, religious affiliation, and disability, as they impact the assessment and treatment of psychopathology. Restricted to Classified Status, Graduate Student in Psychology. Special approval needed from the instructor.

PSYC593 - Research in Psychology 593-1 to 24 Research in Psychology. Research under staff supervision in selected areas of psychology. Graded S/U only. Special approval needed from the instructor.

PSYC594A - Pract-Applied Exper Psyc 594A-1 to 16 Practicum in Psychology-Applied Experimental Psychology. Practicum experience in a professional setting is offered under staff supervision. Graded S/U only. Special approval needed from the instructor.

PSYC594C - Practicum-Clinical Skills 594C-1 to 16 Practicum in Psychology-Clinical Skills. Practicum experience in a professional setting is offered under staff supervision. Introduction to the professional

skills and issues of clinical psychology, including ethics, interviewing, change processes, diversity issues. Special approval needed from the instructor.

PSYC594E - Practicum-Clinical Psychology 594E-1 to 16 Practicum in Psychology-Clinical Psychology. Practicum experience in a professional setting is offered under staff supervision. Graded S/U only. Special approval needed from the instructor.

PSYC594F - Practicum-Counseling Psychology 594F-1 to 16 Practicum in Psychology-Counseling Psychology. Practicum experience in a professional setting is offered under staff supervision. Graded S/U only. Special approval needed from the instructor.

PSYC594L - Practicum-Teaching of Psyc 594L-1 to 16 Practicum in Psychology-Teaching of Psychology. Practicum experience in a professional setting is offered under staff supervision. Graded S/U only. Special approval needed from the instructor.

PSYC595 - Internship 595-1 to 12 Internship. Placement in an approved setting required of all students in clinical, bioclinical, and counseling psychology. Graded S/U only. Restricted to psychology graduate student.

PSYC597 - Preprofessional Training 597-1 to 15 Preprofessional Training. Experience given in research, teaching, or clinical or counseling activities. One hour required each semester of residence. Graded S/U only. Restricted to psychology graduate student.

PSYC598 - Ethical & Professional Probs 598-3 Ethical and Professional Problems in Psychology. The code of ethics in professional practice, in teaching and research; problems and issues of the field are discussed; and relations to other professions and the public are considered. Special approval needed from the instructor.

PSYC599 - Thesis 599-1 to 6 Thesis.

PSYC600 - Dissertation 600-1 to 16 Dissertation.

PSYC601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

PSYC699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Psychology Faculty

Cashel, Mary Louise, Associate Professor, Ph.D., University of North Texas, 1997.

Chwalisz, Kathleen D., Professor, Ph.D., University of Iowa, 1992.

Clancy Dollinger, Stephanie M., Associate Professor, Ph.D., Syracuse University, 1989.

DiLalla, David Louis, Associate Professor and Associate Provost, Ph.D., University of Virginia, 1989.

DiLalla, Lisabeth F., Professor, Ph.D., University of Virginia, 1987.

Dillon, Ronna, Professor, Emerita, Ph.D., University of California, Riverside, 1978.

Dollinger, Stephen J., Professor, Emeritus, Ph.D., University of Missouri-Columbia, 1977.

Drake, Chad, Assistant Professor, Ph.D., University of Mississippi, 2008.

Fehr, Karla, Assistant Professor, Ph.D., Case Western Reserve University, 2014.

Gannon, Linda, Professor, Emerita, Ph.D., University of Wisconsin, 1975.

Gilbert, Brenda O., Associate Professor, Emerita, Ph.D., University of Florida, 1985.

Gilbert, David G., Professor, Ph.D., Florida State University, 1978.

Greer-Medley, Tawanda M., Associate Professor, Ph.D., Southern Illinois University.

Habib, Reza, Associate Professor, Ph.D., University of Toronto, 2000.

Hoane, Michael R., Professor and Chair, Ph.D., Texas Christian University, 1996.

Hylin, Michael, Assistant Professor, Ph.D., Northern Illinois University, 2010.

Jacobs, Eric, Associate Professor, Ph.D., University of Florida, 1997.

Jensen, Robert A., Professor, Emeritus, Ph.D., Northern Illinois University, 1976.
Kertz, Sarah, Assistant Professor, Ph.D., University of Louisville, 2011.
Kibby, Michelle Y., Associate Professor, Ph.D., The University of Memphis, 1998.
Komarraju, Meera, Professor and CoLA Dean, Ph.D., University of Cincinnati, 1987; Ph.D., Osmania University, 1983.
Knutson, Douglas, Assistant Professor, Ph.D., Oklahoma State University, 2017.
Lakshmanan, Usha, Professor, Ph.D., University of Michigan, Ann Arbor, 1989.
McHose, James H., Professor, Emeritus, Ph.D., University of Iowa, 1961.
McKillip, John A., Professor, Emeritus, Ph.D., Loyola University of Chicago, 1974.
O'Donnell, James P., Associate Professor, Emeritus, Ph.D., University of Pittsburgh, 1965.
Peter-Hagene, Liana, Assistant Professor, Ph.D., University of Illinois at Chicago, 2016.
Pitz, Gordon F., Professor, Emeritus, Ph.D., Carnegie Mellon University, 1963.
Radtke, Robert C., Associate Professor, Emeritus, Ph.D., State University of Iowa, 1963.
Ramanaiah, Nerella, Professor, Emeritus, Ph.D., University of Oregon, 1971.
Rodriguez II, Benjamin F., Associate Professor, Ph.D., The Catholic University of America, 2001.
Schill, Thomas R., Professor, Emeritus, Ph.D., Oklahoma State University, 1963.
Schmeck, Ronald R., Professor, Emeritus, Ph.D., Ohio University-Athens, 1969.
Schmidt, Kathleen, Assistant Professor, Ph.D., University of Virginia, 2014.
Snyder, John F., Associate Professor, Emeritus, Ph.D., Loyola University, 1965.
Swanson, Jane L., Professor, Emerita, Ph.D., University of Minnesota, 1986.
Tinsley, Howard E. A., Professor, Emeritus, Ph.D., University of Minnesota, 1971, 1973.
Vaux, Alan C., Professor, Emeritus, Ph.D., Trinity College Dublin, 1979; Ph.D., University of California at Irvine, 1981.
Yanico, Barbara, Associate Professor, Emerita, Ph.D., The Ohio State University, 1977.

Physical Therapist Assistant

The Physical Therapist Assistant program is accredited by the Commission on Accreditation in Physical Therapy Education. It is designed to prepare the graduate to work under the supervision of a physical therapist to treat disabilities resulting from birth defects, disease, or injury. Physical therapy helps the patient to develop strength, mobility, coordination, and skills needed to manage pain. Physical Therapist Assistant is a licensed profession. In order to meet licensure requirements, the student must graduate from an accredited program and successfully pass a National Examination for licensure in the state in which they will practice. Successful completion of the program provides graduates with the educational requirements necessary to take the national licensing examinations for physical therapist assistants.

Students are provided hands-on experience in exercise, physical agents, and other therapeutic techniques in actual practice at Sports Medicine and Physical Therapy at the University, local hospitals, rehabilitation facilities, skilled care facilities, and outpatient clinics. They will work with physical therapists and physical therapist assistants performing therapeutic techniques and carrying out the patient's physical therapy plan of care. While the regular semesters will utilize classroom, laboratory and clinical education experiences, the final summer semester requires two full-time, six-week internships at two separate facilities away from the University campus. In accordance with Federal and State guidelines, the clinical sites will require proof of the following: vaccination for measles, mumps, and rubella, varicella, tetanus, TB, and Hepatitis B, flu vaccine, current CPR card, and proof of completion of HIPAA and blood borne pathogens training as well as a criminal background check and drug screening.

A minimum grade of C for all physical therapist assistant courses is required to maintain enrollment in the Physical Therapist Assistant program. Physical Therapist Assistant courses are taught one time in an academic year. A student who fails a course (or drops out of the physical therapist assistant sequence) must reapply to the Physical Therapist Assistant program.

The program is served by an advisory committee made up of practicing physical therapists, physical therapist assistants, students and educators who provide expertise to assure a curriculum which will prepare graduates to meet the physical therapy needs of the public.

Increasing numbers of elderly and chronically ill persons and the rapid expansion of health care programs in both urban and rural areas have created a demand for physical therapy personnel. Employment opportunities are available in hospitals, rehabilitation centers, extended care facilities, outpatient clinics

and schools. Physical therapy provides a unique service and requires a close interpersonal relationship with the patient.

To be considered for enrollment into the Physical Therapist Assistant program, prospective students must first obtain admission into the University. A program application is required and should be submitted by the posted deadline at the beginning of the spring semester for entry the following fall. Classes are admitted only in the fall semester.

The Physical Therapist Assistant program has Linkage Agreements with Southeastern Illinois College, Rend Lake College, John A. Logan College, Frontier College, Lakeland College, Southeast Missouri State University, Olney College, Wabash Valley College, and Shawnee College. If you have questions about a linkage agreement, please contact the appropriate Community College advisor or SIU's School of Allied Health at (618) 453-7172.

Associate in Applied Science Degree in Physical Therapist Assistant, College of Applied Sciences and Arts

Degree Requirements	Credit Hours
Requirements for Major in Physical Therapist Assistant	
ZOOL 115, AH 241 or PHSL 201 and PHSL 208	7
PSYC 102	3
ENGL 101	3
CMST 101	3
AH 105	2
HED 334	3
KIN 320 and KIN 321	6
PSYC 301, or PSYC 303, or PSYC 304, or PSYC 305	3
PTH 107, PTH 123A*, PTH 123B*, PTH 203, PTH 204, PTH 205, PTH 207, PTH 210A*, PTH 210B*, PTH 212A*, PTH 212B*, PTH 220A*, PTH 220B*, PTH 230A*, PTH 230B*, PTH 233A*, PTH 233B*, PTH 234, PTH 321A#, PTH 321B#, PTH 322 ¹	43
Total	73

¹ A minimum of C/Pass is required in all PTH courses. * A and B are co-requisites. They must be taken together and completed with a minimum grade of C/Pass. # A is a prerequisite to B. A must be successfully completed with a minimum grade of C before the student can progress to the B sequence internship.

AH 241: may substitute PHSL 201/PHSL 208.

PSYC 301: may substitute PSYC 303, PSYC 304, or PSYC 305.

PTH 207 must be taken before KIN 321.

KIN 320 and/or KIN 321 may be taken summer after first year in program.

PTH 203 and PTH 205 can be moved up a year.

AH 241 must be taken before KIN 320.
C or better in all PTH classes.
Residency Requirement: 15 semester hours.
AAS Degree: 60 semester hours required.

Physical Therapist Assistant Courses

PTH107 - Introduction to PT 107-3 Introduction to Physical Therapy Practice and Procedures. Students will be introduced to the historical background, professional, ethical, and legal aspects of the physical therapy profession, as well as the relationship of physical therapy to total health care. Restricted to PTH majors.

PTH123A - Physical Agents I Theory 123A-2 Physical Agents I Theory. Students will be able to describe the theories and physiological effects of physical therapy interventions such as superficial and deep heat, cryotherapy, hydrotherapy, massage and laser therapy. Co-requisite: PTH 123B. Restricted to PTH majors. \$16 to cover expenses associated with equipment maintenance and accreditation.

PTH123B - Physical Agents I Application 123B-1 Physical Agents I Application. Students will be able to safely and effectively apply physical therapy interventions such as superficial heat and deep heat, cryotherapy, hydrotherapy, massage, and laser therapy. Co-requisite: PTH 123A. Restricted to PTH majors. Lab fee: \$10.

PTH199 - Independent Study 199-1 to 10 Independent Study. Provides first year students with the opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment provides access to program and clinical resources. Each student will work under the supervision of a faculty or staff member. Restricted to PTH majors. Special approval needed from the instructor.

PTH203 - Pathology 203-2 Pathology. Students will be able to describe the fundamental basis of diseases including inflammation, cardiovascular diseases, vascular diseases, orthopedic conditions, repair of bone and soft tissue injuries. Emphasis is placed on those conditions treated through physical therapy interventions. Prerequisite: AH 241 or PHSL 201 and 208. Restricted to PTH majors.

PTH204 - Practicum I 204-2 Physical Therapist Assistant Practicum I. Students will be able to carry out routine physical therapy interventions with select patients. They will be able to demonstrate skill in the application of heat, cold, radiant energy, range of motion, therapeutic exercise, activities of daily living, hydrotherapy and massage. Students will also assist in maintaining records and equipment. Course includes clinical experience. Prerequisites: PTH 107 and PTH 123A with a minimum grade of C and PTH 123B with a pass. Restricted to PTH majors.

PTH205 - Physical Therapy Science 205-2 Physical Therapy Science. Students will be able to describe selected medical and surgical conditions from the stand point of etiology, clinical signs and symptoms, and their impact on physical therapy interventions. Prerequisite: AH 241 or PHSL 201 and 208. Restricted to PTH majors.

PTH207 - Human Anatomy 207-3 Human Neuromusculoskeletal Anatomy. Students will be able to describe and identify the structure, function, and integration of the component parts of the skeletal, muscular, and nervous systems of the human body.

PTH210A - Intro Ther Exercise Theory 210A-2 Introduction to Therapeutic Exercise Theory. This course is an introduction to therapeutic exercise theory. Students will apply basic neuroanatomy and theoretical concepts related to therapeutic exercise and identify treatment interventions and special tests associated with specific orthopedic conditions. Co-requisite: PTH 210B. Prerequisite: PTH 207 with a minimum grade of C. Restricted to PTH majors.

PTH210B - Intro Ther Exercise Applicatn 210B-1 Introduction to Therapeutic Exercise Application. This course is an introduction to therapeutic exercise application. Students will be able to palpate anatomical landmarks, perform length tests and manual muscle tests to individual muscles and muscle

groups. Students will also learn to select, instruct, and perform exercises to improve flexibility and muscle performance. Co-requisite: PTH 210A. Prerequisite: PTH 207 with a minimum grade of C. Restricted to PTH majors. Lab fee: \$7.

PTH212A - Physical Rehab Theory 212A-3 Physical Rehabilitative Theory. Students will be able to understand and explain the need for and concepts involved in physical rehabilitation interventions that assist patients in obtaining a state of optimal function. Co-requisite: PTH 212B. Restricted to PTH majors. \$16 to cover expenses associated with equipment maintenance and accreditation.

PTH212B - Physical Rehab Application 212B-1 Physical Rehabilitative Application. Students will be able to demonstrate competency in performing physical rehabilitative patient care skills and interventions that assist patients in obtaining a state of optimal function. Interventions covered include: range of motion, goniometry, transfers, chest physical therapy, and utilization of assistive devices. Co-requisite: PTH 212A. Restricted to PTH majors. Lab fee: \$20.

PTH220A - Neuro Ther Ex Theory 220A-2 Neurologic Therapeutic Exercise Theory. Students will understand the principles of advanced therapeutic exercise for patients with neurologic dysfunction. Theories behind motor control, motor reflexes, motor learning, sensory integration, motor development, and utilization of synergies are covered. Students will be able to identify the need for adaptive equipment for individuals with neurologic dysfunction. Co-requisite: PTH 220B. Prerequisites: PTH 210A with a minimum grade of C and PTH 210B with a pass. Restricted to PTH majors.

PTH220B - Neuro Ther Ex Application 220B-1 Neurologic Therapeutic Exercise Application. Students will be able to demonstrate through supervised application, advanced therapeutic exercise interventions such as sensory integration, motor reflexes, motor development, and utilization of synergies for specific clinical neurological conditions. Co-requisite: PTH 220A. Prerequisites: PTH 210A with a minimum grade of C and PTH 210B with a pass. Restricted to PTH majors.

PTH230A - Advanced Ther Exercise Theory 230A-1 Advanced Therapeutic Exercise Theory. This course is a progression of PTH 210A designed to present advanced theoretical concepts related to therapeutic exercise. Students will apply neuroanatomy and therapeutic principles to the spine, peripheral joints, connective tissue, vestibular, sensorimotor and neuromuscular systems. Co-requisite: PTH 230B. Prerequisites: PTH 210A with a minimum grade of C and PTH 210B with a pass. Restricted to PTH majors.

PTH230B - Advanced Ther Ex Application 230B-1 Advanced Therapeutic Exercise Application. This course is a progression of PTH 210B designed to develop advanced competencies in therapeutic exercise. Students will perform techniques related to spinal stabilization, movement impairments, soft tissue and joint mobilization, muscle energy, proprioceptive neuromuscular facilitation, and proprioceptive/vestibular systems. Co-requisite: PTH 230A. Prerequisites: PTH 210A with a minimum grade of C and PTH 210B with a pass. Restricted to PTH majors.

PTH233A - Physical Agents II Theory 233A-2 Physical Agents II Theory. Students will understand and describe the physiological effects, indications, and contraindications for electrotherapy, traction, and intermittent compression. Students will also explain the different theories and mechanics of pain. Co-requisite: PTH 233B. Prerequisites: PTH 123A with a minimum grade of C and PTH 123B with a pass. Restricted to PTH majors. \$16 to cover expenses associated with equipment maintenance and accreditation.

PTH233B - Physical Agents II Application 233B-1 Physical Agents II Application. Students will be able to demonstrate the safe and effective application of: compression units, traction, electrical currents, electrical muscle stimulation, and electrotherapy for pain and healing functions. Students will administer standardized questionnaires, graphs, behavioral scales or visual analog scales for pain. Co-requisite: PTH 233A. Prerequisites: PTH 123A with a minimum grade of C and PTH 123B with a pass. Restricted to PTH majors. Lab fee: \$30.

PTH234 - Practicum II 234-3 Physical Therapist Assistant Practicum II. Students will be able to perform the skills acquired in Practicum I as well as more complex interventions with selected patients. They will demonstrate skills in therapeutic exercise, application of physical agents, and record keeping. Course

includes clinical experience. Prerequisites: PTH 107, 123A, 203, 204, 210A, and 212A with a minimum grade of C; PTH 123B, 210B, and 212B with a pass. \$35 fee for online licensure practice examination.

PTH299 - Independent Study 299-1 to 14 Independent Study. Provides second-year students with the opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment provides access to program and clinical resources. Each student will work under the supervision of a faculty or staff member. Restricted to PTH majors. Special approval needed from the instructor.

PTH321A - Clinical Internship 321A-4 Physical Therapist Assistant Clinical Internship. Students will be able to apply previously learned theories and perform interventions of patient care through closely supervised internship experiences in two separate physical therapy facilities. First six week internship. Must be taken in A, B sequence. Corequisite: PTH 322. Prerequisites: PTH 220A, 230A, 233A, and 234 with a minimum grade of C; PTH 220B, 230B, and 233B with a pass. \$23 to cover expenses associated with use of CPI Web for clinical evaluation.

PTH321B - Clinical Internship 321B-4 Clinical Internship. Students will be able to apply previously learned theories and perform interventions of patient care through closely supervised internship experiences in two separate physical therapy facilities. Second six-week internship. Must be taken in A, B sequence. Co-requisite: PTH 322. Prerequisites: PTH 321A with a minimum grade of C. Restricted to PTH majors. \$23 to cover expenses associated with use of CPI Web for clinical evaluation.

PTH322 - Seminar 322-2 Physical Therapist Assistant Seminar. Students will be able to discuss with the program director or faculty member their internship patient care experiences and case study or presentation. Students will also evaluate their clinical internship experience as well as their academic preparation at SIU. Corequisites: PTH 321A and 321B. Prerequisites: PTH 220A, 230A, 233A, and 234 with a minimum grade of C; PTH 220B, 230B, and 233B with a pass.

Physical Therapist Assistant Faculty

Davis, Julie K., Associate Professor, M.S.P.T., Barry University, 1996.

Davis, Timothy S., Clinical Instructor, M.S., Indiana State University, 1996.

Osman, Eric, Clinical Instructor, MPT, Northwestern University, 1998.

Rogers, Janet, L., Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1995.

Radiologic Sciences

These professionals function as first assistants to the physician in medical practice, utilizing radiant energy, ionizing radiation (X-Ray), other forms of electro-magnetic energy, and sound waves for the imaging, diagnosis, and treatment of disease. Each distinct specialty option has its own educational criteria, accreditation and clinical training requirements.

The program prepares technologists for entry-level positions and also prepares the technologist who wishes to gain additional expertise. The radiologic technology curriculum and all program options are designed to meet the guidelines for accreditation and/or recognition by the American Registry of Radiologic Technologists, the Joint Review Committee on Education in Radiation Therapy Technology and the American Registry of Diagnostic Medical Sonography.

The Radiologic Sciences program offers a Bachelor of Science Degree with options in: diagnostic medical sonography, magnetic resonance imaging/computed tomography, radiation therapy technology, and radiology education/management.

To be considered for enrollment into the Radiologic Sciences program, prospective students must first obtain admission to the University. To be approved for entry into the major and professional sequences, applicants must submit additional application materials. This program admits a limited number of students based on specific selection criteria. Students may be selected for admission to the Radiologic Sciences program either as freshmen or sophomores. Freshmen will be evaluated on the basis of ACT scores

and high school grade point average. Sophomores will be evaluated on the number of hours of college credit, college grade point average as calculated by SIUC, college mathematics and science grades and the grade in anatomy. Anatomy, math and science courses must be completed prior to the following fall semester.

Accreditation guidelines place limits on the enrollment in this program. Students begin the professional sequence each fall only. This degree program requires the successful completion of clinical internships. In accordance with Federal and State guidelines, the clinical sites will require proof of the following: vaccination for measles, mumps, rubella, tetanus, TB, varicella (chicken pox), Hepatitis B, and influenza; current CPR card; and proof of completion of HIPAA and blood-borne pathogens training. Affiliation sites will also require students to undergo a criminal background check and drug screening.

Associate in Applied Science Degree, College of Applied Sciences and Arts

The A.A.S. degree in the Radiologic Sciences curriculum is designed to prepare students to become registered radiologic technologists (medical radiographers). Completion of the program provides graduates with the educational requirements necessary to take the national certification examination administered by the American Registry of Radiologic Technologists. Students in the radiation therapy technology, and magnetic resonance imaging/computed tomography, and radiology education, and radiology management specialization will receive the A.A.S. degree upon successful completion of their junior year.

All students graduating from the Radiography program must pass their ARRT exam and be certified by the ARRT by the start date of their specialization or the student will not be allowed to enter their specialization in Radiation Therapy or MRI/CT. All Radiography students must pass each of their Radiologic Science courses: RAD 122, 102, 112, 112L, 202, 212, 222, 232, 232L, 312, 322, 332, 342, 352 with a grade of "C" or better (the minimum requirement) in order to satisfy Program requirements and stay in the Program. Any Radiography student that does not meet the minimum course requirement (a course grade of "C" or better) will not be allowed to continue in the Program. The student is allowed to re-apply for admission to the Program the following year through the Program's online application process.

The following general education and radiologic sciences courses totaling 70 credit hours are required to receive the A.A.S. degree in Radiologic Sciences.

Degree Requirements	Credit Hours
University Core Curriculum Requirement	15
General Education Courses: ENGL 101; MATH 108 OR 101; CMST 101; University Core Science, University Core Social Science.	
A.A.S. Radiologic Sciences Requirements	48
Radiologic Sciences Courses: RAD 122, RAD 102, RAD 112L, RAD 202, RAD 212, RAD 222, RAD 232, RAD 232L, RAD 312, RAD 322, RAD 332, RAD 342, RAD 352	
Additional Required Course: AH 241 or Anatomy Equivalent	4
Total	67

Bachelor of Science Degree, College of Applied Sciences and Arts

The Bachelor of Science degree in Radiologic Sciences is a 120-semester hour program consisting of forty-one semester hours of University Core Curriculum requirements, and 79 semester hours of combined radiography and professional option courses. All coursework required for the A.A.S. degree in Radiologic Sciences counts toward this degree. Within the Radiologic Sciences curriculum, certain courses must be passed by a minimum requirement in order to progress through the program (please see course descriptions for minimum requirements listed for each course). Any student unable to achieve the minimum requirements, will not be allowed to progress through the program and must re-apply for admission into the program and specialization through the program's online application process.

Diagnostic Medical Sonography (Ultrasound) Option

Sonography is a diagnostic medical procedure that uses high frequency sound waves (ultrasound) to produce dynamic visual images of organs, tissues, or blood flow inside the body. This type of procedure is called a sonogram. There are several areas of specialization in the field of Sonography. While most Sonographers work in hospitals, many will also find employment in clinics, private practice physician offices, public health facilities, laboratories, and other medical settings performing examinations in their areas of specialization. Career advancement opportunities exist in education, administration, research, and in commercial sales and education/application specialists.

The sonography option is a direct entry program for students with the anticipated graduation year of 2018 or later as students are not required to go through the Diagnostic Radiography portion of the program. If an AAS Radiology graduate wants to pursue Sonography education, they will have to complete the third and fourth year Sonography coursework as well as all general education courses listed in the curricular guide.

Students who are accepted into the Sonography program as a freshman or a sophomore will receive a minor in Health Information and Informatics Management and a minor in Health Care Management by completion of the additional requirements. Year three transfer students or students who are accepted into the Sonography program as a Junior may do one or both of the minors. Some of the additional requirements may be substituted for those newly transfer or newly accepted Junior students.

Within the Diagnostic Medical Sonography Program, each student must complete RAD 349, 359A, 359B, 369, 379A, 379B, 389, 399A, 399B, 399C, 459A, 459B, 479A, 479B, and 489 with a grade of "C" or higher and RAD 409A and 409B with a grade of "B" or higher. Any student not completing the above mentioned requirements will not be allowed to graduate/progress through the Sonography Program and must re-apply for admission into the program through the program's online application process.

Degree Requirements	Credit Hours
University Core Curriculum Requirement	39
To include: UNIV 101, MATH 101 or MATH 108, PHYS 101	
Sonography Requirements	50
RAD 349, RAD 359A, RAD 359B, RAD 369, RAD 379A, RAD 379B, RAD 389, RAD 399A, RAD 399B, RAD 399C, RAD 409A, RAD 409B, RAD 459A, RAD 459B, RAD 469, RAD 479A, RAD 479B, RAD 489	
Additional Requirements	10
AH 241 - 4 (2 credits will cover UCC Human Health)	2

Degree Requirements	Credit Hours
AH 415	3
AH 105	2
ISAT 229	3
HCM COURSE - Receive Health Care Management Minor and Health Information and Informatics Management Minor	21
HCM 360	3
HCM 364	3
HCM 366	3
HCM 368	3
HCM 388	3
HCM 410	3
HCM 468	3
Total	120

Magnetic Resonance Imaging/Computed Tomography Option

This option is designed to prepare technologists in the advanced areas of magnetic resonance imaging (MRI) and computed tomography (CT). The MRI and CT components will emphasize physics, technology, instrumentation, sectional anatomy, and pathology. Technologists employed in these capacities will be supervised by a board certified radiologist, but will be afforded a greater amount of responsibility and independence in the performance of their duties.

Degree Requirements	Credit Hours
University Core Curriculum Requirement	39
To include: UNIV 101U, AH 241 or Anatomy Equivalent AH 105	2
Professional Core Requirements	48
Including: RAD 102, RAD 112, RAD 112L, RAD 122, RAD 202, RAD 212, RAD 222, RAD 232, RAD 232L, RAD 312, RAD 322, RAD 332, RAD 342, RAD 352	
MRI and CT	31

Degree Requirements	Credit Hours
Including: RAD 364, RAD 374, RAD 384, RAD 394, RAD 404, RAD 414, RAD 424, RAD 434	
Total	120

Radiation Therapy Technology Option

Radiation therapy technologists assist radiation oncologists in all aspects of the administration of radiation therapy treatment; their primary responsibility consists of exposing specific areas of the patient's body to prescribed doses of ionizing radiation. Radiation therapy technologists also provide appropriate patient care; this includes exercising judgment when administering treatment and adhering to the principle of radiation protection for the patient, self and others.

Within the radiation therapy specialization, each student must complete RAD 360, 370, 380, 390 and 400 with a "C" or higher and RAD 410, 420, 430, and 440 with a "B" or higher. Any student not completing the above mentioned requirements, will not be allowed to graduate with the radiation therapy specialization and must re-apply for admission into the specialization. The student will also not be cleared to take the ARRT radiation therapy examination if they do not meet the minimum criteria through the program's online application process.

Degree Requirements	Credit Hours
University Core Curriculum Requirement	39
To include: UNIV 101U, AH 241 or Anatomy Equivalent AH 105	2
Radiation Therapy Technology Core Requirements	48
Including: RAD 102, RAD 112, RAD 112L, RAD 122, RAD 202, RAD 212, RAD 222, RAD 232, RAD 232L, RAD 312, RAD 322, RAD 332, RAD 342, RAD 352	
Radiation Therapy Technology	31
Including: RAD 360, RAD 370, RAD 380, RAD 390, RAD 400, RAD 410, RAD 420, RAD 430, RAD 440	
Total	120

Radiology Education/Management Option

This option is designed to allow entry level radiographers the opportunity to study educational theories, philosophies, styles, and techniques. Additionally, the student will be introduced to management concepts as they relate to medical imaging departments. The primary focus of the radiology education and management option is to allow students who wish to enter either radiography education or radiography management the opportunity to learn and develop the skills necessary for success in these two environments. Students will be required to complete an internship in their chosen area of emphasis (if state licensure is feasible) or an undergraduate research project related to radiology education or management.

Degree Requirements	Credit Hours
University Core Curriculum Requirement	39
To include: UNIV 101U, AH 241 or Anatomy Equivalent AH 105	2
Radiology Education/Management Core Requirements	48
Including: RAD 102, RAD 112, RAD 112L, RAD 122, RAD 202, RAD 212, RAD 222, RAD 232, RAD 232L, RAD 312, RAD 322, RAD 332, RAD 342, RAD 352	
Radiology Education /Management	31
Select Nine Courses:	27
RAD 345, RAD 355, RAD 415, RAD 425A, RAD 425B, RAD 435, RAD 480, RAD 481, RAD 482	
Select One Course:	4
RAD 475 or RAD 476	
Total	120

Radiologic Sciences Courses

RAD102 - Radiographic Technique 102-3 Introduction to Radiologic Technology and Radiographic Technique. This course is designed to introduce the student to the medical radiography profession. Students will begin their study of medical terminology, professional behavior, ethics, theory of radiographic exposure and its application to computed radiography and digital radiography. Included is an introduction to the principles of radiation protection. Restricted to RADS majors.

RAD112 - Anatomy and Positioning 112-3 Radiographic Anatomy and Positioning. Designed to provide the student radiographer with didactic instruction leading to the development of clinical competencies. It serves as a foundation for the progression towards advanced clinical knowledge. Radiographic anatomy and positioning of the extremities, chest, abdomen, vertebral column, and routine fluroscopic procedures will be stressed. Also, emphasis is placed on the soft-tissue structures demonstrated by radiographs of these areas. The principles of radiation protection for the patient and for the radiographer are stressed. Routine radiographic positioning common to most health facilities will be described. Must be taken concurrently with RAD 112L. If RAD 112L is dropped, then RAD 112 must be dropped. Prerequisites: AH 241 with a grade of C or better. Co-requisites: RAD 112L, RAD 102 and RAD 202. Restricted to RADS majors.

RAD112L - Anatomy-Positioning Lab 112L-1 Radiographic Anatomy and Positioning Laboratory. This course is the laboratory to accompany RAD 112. Designed to provide the student radiographer with didactic instruction leading to the development of clinical competencies. It serves as a foundation for the progression towards advanced clinical skills. Radiographic anatomy and positioning of the extremities, chest, abdomen, vertebral column, and routine fluoroscopic procedures will be stressed. The principles of radiation protection for the patient and for the radiographer are practiced as well. Routine radiographic positioning common to most health facilities will be described, demonstrated and practiced on phantoms

in the energized X-ray labs. Two laboratory sessions per week. Must be taken concurrently with RAD 112. If RAD 112 is dropped, then RAD 112L must be dropped. Prerequisite: AH 241 with a grade of C or better. Co-requisites: RAD 112, RAD 102 and RAD 202. Restricted to RADS majors. Lab fee: \$75.

RAD122 - Seminar in Rad Sciences 122-2 Seminar in Radiologic Sciences. Study will focus on developing a professional identity, an understanding of the integrated health care team, an understanding of the language of medicine in general and radiology in particular, and development of basic patient care techniques and skills. Restricted to admission to major or consent of school.

RAD202 - Radiographic Physics 202-3 Radiographic Physics. This course will concentrate on general theories of physics as they relate to matter, mechanics and electricity. It also involves the study of the nature and production of radiation and understanding of the complexity of radiographic equipment and x-ray circuitry. Co-requisites: RAD 102, RAD 112 and RAD 112L. Restricted to RADS majors and acceptance into the Radiologic Sciences Program.

RAD212 - Special Procedures 212-2 Special Radiographic Procedures. Includes the study of contrast producing agents which are used to visualize specific parts of the body. Radiographic technique employed in this type of imaging is highly specialized and will be studied in depth. Prerequisite: RAD 222 with a minimum grade of C. Co-requisites: RAD 232 and RAD 232L.

RAD222 - Radiography Clinic I 222-9 Radiography Clinic I. The student is assigned to a selected clinical education center for the entire semester. During this semester, the student radiographer is expected to practice and perfect the professional skills developed the previous semester on campus. The student will participate in specific experiences and film critique assignments designed to meet objectives for the semester. Prerequisites: C or better in RAD 102, RAD 112, RAD 112L and RAD 202. Restricted to RADS majors.

RAD232 - Selected Systems 232-3 Selected Radiography Systems. This course is designed to instruct the student in the anatomy of the skull, facial bones, paranasal sinuses, mandible, digestive system, urinary system, biliary system, and human reproductive systems. Routine imaging protocols common to most health facilities will be described. Particular emphasis will be placed on radiographic imaging of the trauma patient. This course must be taken concurrently with RAD 232L. If RAD 232 is dropped then RAD 232L must be dropped. Prerequisite: C or better in RAD 222. Co-requisites: RAD 232L and RAD 212. Restricted to RADS majors.

RAD232L - Selected Systems Lab 232L-1 Selected Radiography Systems Laboratory. This is the laboratory component associated with RAD 232. Designed to instruct the student in the anatomy and positioning of the skull, facial bones, paranasal sinuses, digestive, urinary, biliary and human reproductive systems. Routine imaging projections common to most health facilities will be practiced on a phantom in the energized laboratory. Particular emphasis is placed on radiography of the trauma patient. Principles of radiation protection for the patient and the radiographer are practiced as well. One laboratory session per week. Must be taken concurrently with RAD 232. If RAD 232 is dropped then RAD 232L must be dropped. Prerequisite: RAD 222 with a minimum grade of C. Co-requisites: RAD 232 and RAD 212. Restricted to RADS majors. Lab fee: \$75.

RAD299 - Individual Study 299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access for advanced radiologic sciences students to the resources of the radiologic sciences facilities. Each student will work under the supervision of a sponsoring program faculty member. Restricted to RADS majors.

RAD312 - Radiographic Pathology 312-3 Radiographic Pathology. Deals with the etiology and processes of trauma and disease. Emphasis will be placed on radiographic pathology of the body systems and the manifestation of this pathology. Prerequisite: RAD 332 with a minimum grade of C. Co-requisites: RAD 322, RAD 342 and RAD 352.

RAD322 - Rad Contrast-Sectional Anat 322-3 Radiographic Contrast and Sectional Anatomy. An introduction to the use of radiopharmaceuticals for enhancement of various anatomical structures within the human body. Includes coverage of common types of contrast agents, their administration, their physiological effects on various organ systems, and emergent treatment. Sectional anatomy includes the study of body structures in the coronal, sagittal and transverse planes, used in computed tomography

(CT) and magnetic resonance imaging (MRI). Emphasis will be placed on 1) identifying the imaging plane; 2) identifying the anatomy visualized in a given plane; and 3) differentiating between images produced by CT and MRI. Prerequisite: RAD 332 with a minimum grade of C. Co-Requisites: RAD 312, RAD 342 and RAD 352.

RAD332 - Radiography Clinic II 332-9 Radiography Clinic II. The student returns to a clinical education center for the entire semester. The student radiographer will practice and perfect the advanced professional skills developed in the previous semester on campus. The student will participate in specific experiences and film critique assignments designed to meet the objectives for the semester, including advanced modalities. Prerequisite: C or better in RAD 212, RAD 232 and RAD 232L. Restricted to RADS majors.

RAD341 - Sonography Fundamentals 341-1 Fundamentals of Sonography. This course is designed to introduce the profession of Diagnostic Medical Ultrasonography. Topics of study include historical perspectives, patient care and communication, medical ethics and terminology. Restricted to RADS majors.

RAD342 - Radiation Biology 342-3 Radiation Biology. Designed to instruct the student radiographer in the principles and terminology of radiobiology. Emphasis will be placed on how these principles relate to radiation protection for both the patient and radiographer. Also included are introductions to nuclear medicine and radiation therapy technology. Prerequisite: RAD 332 with a minimum grade of C. Co-Requisites: RAD 312, RAD 322 and RAD 352.

RAD345 - Intro to Rad Management 345-3 Introduction to Radiology and Diagnostic Imaging Management. (Same as DH 345) This course focuses on the unique management issues involved in diagnostic imaging. These problems include accreditation, federal law unique to radiology, and medical-legal issues of patient care. Additionally, state and local licensure laws pertinent to ionizing radiation and radiation safety will be explored. Restricted to the major or consent of school.

RAD349 - Sonography Fundamentals 349-3 Fundamentals of Sonography. This course is designed to introduce the profession of Diagnostic Medical Ultrasonography. Topics of study include historical perspectives; medical ethics and law; patient care and communication; exam related documentation; work related musculoskeletal disorders, and terminology. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD352 - Special Imaging Modalities 352-3 Special Imaging Modalities. This course provides the student with the knowledge and understanding relevant to the function, operation and application of the various techniques used in image production. This course also includes a complete review of the radiography curriculum in preparation for the American Registry of Radiologic Technologists National certification examination. Prerequisite: RAD 332 with a minimum grade of C. Co-Requisites: RAD 312, RAD 322 and RAD 342.

RAD355 - Teaching Strategies Radiology 355-3 Teaching Strategies in Radiology. (Same as DH 365) This course is designed to introduce the prospective radiology educator to philosophies and strategies required to successfully instruct students in the various fields of allied health, including radiography. Restricted to the major or consent of school.

RAD359A - OB/GYN Sonography I 359A-2 Obstetric & Gynecology Sonography I. A study of gynecologic and obstetric/fetal anatomy; physiology; patient care; and imaging/interventional techniques. Emphasis will be placed on normal and abnormal gynecologic anatomy, normal and abnormal first trimester obstetric ultrasound, physiology, sonographic patterns, clinical history, physical assessment, and appropriate exam protocol. Restricted to major in RADS or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD359B - OB/GYN Sonography II 359B-2 Obstetric & Gynecology Sonography II. A study of gynecologic and obstetric/fetal anatomy; physiology; patient care; and imaging/interventional techniques. Emphasis will be placed on normal and abnormal obstetric and fetal anatomy, physiology, sonographic patterns, clinical history, physical assessment. Prerequisite: RAD 359A with a minimum grade of C. Concurrent enrollment in RAD 379B required. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD360 - Fundmntls of Radiation Therapy 360-2 Fundamentals of Radiation Therapy. The rationale for and methods employed in the treatment of cancer by radiotherapy. The role of radiotherapy and its relationship to other modalities utilized in the treatment of cancer are explored and defined. Also, an introduction to the principles and concepts of radiobiology. Restricted to RADS majors.

RAD364 - CT Technology 364-3 Computed Tomography Technology. This course will focus on the physical principles of computed tomography. Topics of discussion will include the history of computed tomography, its instrumentation, data acquisition, image reconstruction, contrast agents, patient care/safety, and quality assurance. Special imaging application for interventional, trauma, and oncology will be discussed. Restricted to major, completion of ARRT in radiography, or consent of school.

RAD369 - Vascular Sonography 369-3 Vascular Sonography. A study of vascular anatomy, physiology, hemodynamics, wave form analysis, and treatment of vascular disease. Emphasis will be placed on carotid duplex color flow imaging, upper and lower extremity arterial and venous duplex/color flow imaging, and ankle brachial indices, including the clinical history, physical assessment, and appropriate scanning protocol. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD370 - Tech&App of Rad Therapy 370-3 Techniques and Applications of Radiation Therapy. The technical aspects of radiotherapy including dosimetry, shielding, radioactive sources and methodology. Lecture and laboratory format. Restricted to RADS majors. Lab fee: \$100.

RAD374 - Sectional Anatomy 374-3 Sectional Anatomy and Imaging Applications. This course focuses on identifying anatomical structures produced by Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) scanners in the transverse, sagittal, coronal, and orthogonal planes. The MRI and CT images place emphasis on the head, neck, spine, chest, abdomen, pelvis, musculoskeletal (joints), and vascular system. Restricted to major.

RAD379A - Abdominal Sonography I 379A-2 Abdominal Sonography I. A study of abdominal anatomy; physiology; patient care; and imaging/interventional techniques. Emphasis will be placed on normal and abnormal vascular, hepatic, biliary, splenic, and renal systems and associated sonographic patterns. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD379B - Abdominal Sonography II 379B-2 Abdominal Sonography II. A continuation in the study of abdominal anatomy; physiology; patient care; and imaging/interventional techniques. Emphasis will be placed on normal and abnormal peritoneal, retroperitoneal, gastrointestinal, superficial structures and associated sonographic patterns. Prerequisite: RAD 379A with a minimum grade of "C". Concurrent enrollment in RAD 359B required. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD380 - Physics of Radiation Therapy 380-3 Physics of Radiation Therapy. Includes a study of the physical principles and applications of radiation in therapy. Defines the nature of radiation, radioactivity, interactions with matter and different radiation therapy instrumentation. Review of basic radiation therapy principles for use in later courses.

RAD384 - MRI Technology 384-4 Magnetic Resonance Imaging Technology. This course will focus on the physical principles of magnetic resonance imaging. Topics of discussion will include the history of magnetic resonance imaging, its physical principles, instrumentation, imaging techniques, contrast agents, patient care/safety, and quality assurance. Prerequisite: completion of ARRT in radiography, or consent of school. Limited to major.

RAD389 - Ultrasound Physics 389-3 Ultrasound Physics and Instrumentation. A study of diagnostic medical ultrasound physics. Topics include ultrasound wave generation and propagation; transducers; pulse echo instruments; pulse echo imaging; image storage and display; Doppler; artifacts; quality assurance; bioeffects and safety. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD390 - Oncology Nursing 390-2 Oncology Nursing. This course will include nursing techniques on patients with cancer, anatomy, staging of disease, and radiobiologic effects of radiation on the patient.

RAD394 - MRI and CT Pathology 394-3 MRI and CT Pathology. This course is designed as an overview of pathologies commonly seen in magnetic resonance imaging and computed tomography. Along with distinguishing various types and pathologies as seen on MRI and CT scan, emphasis will be placed on a general understanding of the description, etiology, epidemiology, signs and symptoms, imaging characteristics, treatment, and prognosis of those pathologies. Restricted to major.

RAD399A - Clinical Practicum I (Lab) 399A-2 Clinical Practicum I (Lab). A study of sectional anatomy in the transverse, longitudinal and coronal planes, with emphasis on abdominal/small parts, ob/gyn, and vascular ultrasound procedures and protocols. This is the laboratory that must be taken concurrently with RAD 359A and RAD 379A and includes a \$100 laboratory fee. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD399B - Clinical Practicum II (Lab) 399B-2 Clinical Practicum II (Lab). A study of sectional anatomy in the transverse, longitudinal and coronal planes, with emphasis on abdominal/small parts, ob/gyn, and vascular ultrasound procedures and protocols. This is the laboratory that must be taken concurrently with RAD 359B and RAD 379B and includes a \$100 laboratory fee. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD399C - Clinical Practicum III (Lab) 399C-2 Clinical Practicum III (Lab). A study of sectional anatomy in the transverse, longitudinal and coronal planes, with emphasis on abdominal/small parts, ob/gyn, and vascular ultrasound procedures and protocols. This is the laboratory that must be taken concurrently with RAD 369. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD400 - Radiation Dosimetry 400-3 Radiation Dosimetry. Includes a study of the principles of radiation dosimetry and related calculations. Topics include calibration, protection, dose determination to points of interest, and basic treatment planning.

RAD404 - MRI & CT Clinical Internship I 404-10 MRI and CT Clinical Internship I. This is first clinical internship in a two-course sequence. During the first clinical internship, the student will be assigned to a selected clinical education center for the entire semester. During this semester, the student is expected to practice and perfect the professional skills developed the previous semester on campus. Not for graduate credit. Co-requisite: RAD 414. Prerequisite: "C" or better in RAD 364, 374, 384, 394.

RAD409A - Clinical Practicum IV (Clinic) 409A-10 Clinical Practicum IV (Clinic). The student is assigned to a clinical education center(s) to practice and perfect sonography skills. The student will be supervised by qualified sonographers and directed in specific experiences designed to meet course objectives. Restricted to RADS major or consent of school. Students must receive a grade of "B" or higher to advance within the Sonography Program.

RAD409B - Clinical Practicum V (Clinic) 409B-10 Clinical Practicum V (Clinic). The student is assigned to a clinical education center(s) to practice and perfect sonography skills. The student will be supervised by qualified sonographers and directed in specific experiences designed to meet course objectives. Restricted to RADS major or consent of school. Students must receive a grade of "B" or higher to advance within the Sonography Program.

RAD410 - Radiation Therapy Intern I 410-10 Radiation Therapy Clinical Internship I. This is the first clinical internship of a two-course sequence. A practicum at a selected clinical education center in which the student functions under direct supervision and applies the knowledge gained in the classroom. The student will function in the clinical setting to interpret and execute the radiation oncologist's orders and operate the ionizing radiation equipment during actual patient treatments and simulations. Construction of treatment aids will also be performed. Not for graduate credit. Prerequisite: A grade of C or better in RAD 360, 370, 380, 390, and 400.

RAD414 - Special Studies in MRI/CT 414-2 Special Studies in MRI and CT. Individual projects in MRI and CT will be selected by the student with approval of the instructor and culminate in case study reviews. In addition, the student will prepare to challenge The American Registry of Radiologic Technologists professional examinations in either MRI or CT. A portion of this course is on-campus. Not for graduate credit. Prerequisite: "C" or better in RAD 364, 374, 384, and 394.

RAD415 - Research Methods 415-3 Research Methods. (Same as DH 411) This course will introduce the student to the various mechanisms by which scholarly and professional research are conducted. These include quantitative and qualitative methodologies, historiographical, and a mixed methods approach. Restricted to the major or consent of school.

RAD420 - Special Problems Rad Therapy 420-2 Special Problems in Radiation Therapy. A review of the many types of cancer to include discussion of clinical symptoms, treatment patterns, technical pitfalls, survival statistics and patient/family interactions. Quality assurance procedures for a Radiation Therapy Department will also be reviewed to include the different QA tests, tolerances, and frequencies. Both written and oral seminar responses will be included in this course. Not for graduate credit. Prerequisite: RAD 360, 370, 380, 390, 400.

RAD424 - MRI/CT Clinical Internship II 424-4 MRI and CT Clinical Internship II. This is the second clinical internship in a two-course sequence. The student will be assigned to a selected clinical education center. During this semester, the student will continue to perfect his/her professional skills developed during the previous clinical internship. In addition, the student will focus on developing hands-on skills in radiation therapy treatment simulation, interventional techniques, stereotactic procedure and trauma. Not for graduate credit. Prerequisite: "C" or better in RAD 404 and RAD 414. Concurrent enrollment in RAD 434.

RAD425A - Readings-Radiology Education 425A-3 Readings in Radiology Education. (Same as DH 425A) Supervised readings of the student's primary area of interest will be conducted under the direction of a faculty member. This is a writing intensive, independent study course. Restricted to the major or consent of school.

RAD425B - Readings-Radiology Management 425B-3 Readings in Radiology Management. (Same as DH 425B) Supervised readings of the student's primary area of interest will be conducted under the direction of a faculty member. This is a writing intensive, independent study course. Restricted to the major or consent of school.

RAD430 - RT Internship II 430-4 Radiation Therapy Clinical Internship II. This is the second clinical internship of a two-course sequence. A clinical practicum at a selected clinical education center in which the student functions under direct supervision and applies the knowledge gained in the classroom and Clinical Internship I. The student will practice and improve the professional skills developed the previous semester to include radiation therapy treatment, simulation and medical dosimetry. Students receive a "B" or higher to successfully complete the radiation therapy specialization. Not for graduate credit. Prerequisite: A grade of B or better in RAD 410 and RAD 420. Concurrent enrollment required in RAD 440.

RAD434 - Seminar in MRI and CT 434-2 Seminar in MRI and CT. This course is designed to prepare the student to challenge The American Registry of Radiologic Technologists professional examinations in either MRI or CT. During the course the student will take mock registry exams in either MRI or CT and review pertinent material. Career development activities will include interviewing techniques, resume and cover letter preparation, and the application process. Not for graduate credit. Prerequisite: "C" or better in RAD 404 and RAD 414. Concurrent enrollment in RAD 424.

RAD435 - Problems Rad Educ & Mgmt 435-3 Problems in Radiology Education and Management. (Same as DH 435) The purpose of this course is to identify problems/issues within Radiology Education and Management and to present viable solutions to those problems/issues. Utilizing scholarly research and correlative research from other fields, the student will engage in integrated problem solving. This is an independent study course, conducted under the direction of a faculty member, and is a writing intensive course.

RAD440 - Seminar in RT 440-2 Seminar in Radiation Therapy. This course is designed to prepare the student to challenge the American Registry of Radiologic Technologists Radiation Therapy exam. During this course, the student will take mock registry exams in the specialty of radiation therapy and go through review materials. A portion of this course is on-campus. Professional development is addressed. Students must receive a "B" or higher to successfully complete the radiation therapy specialization. Not for graduate credit. Prerequisite: A "B" or better in RAD 410 and RAD 420. Co-requisite: A "B" or better in RAD 430.

RAD444 - CNS Imaging in MRI 444-3 Central Nervous System Imaging in Magnetic Resonance Imaging. Lecture includes discussion of imaging applications of the central nervous system. Review of related anatomy and common pathologies. Special approval needed from the instructor.

RAD454 - Body Imaging in MRI 454-3 Body Imaging in Magnetic Resonance Imaging. Lecture includes discussion of the imaging applications of the gastrointestinal, genitourinary, hepatobiliary and musculoskeletal systems. Review of related anatomy and common pathologies. Special approval needed from the instructor.

RAD459A - Adv OB & GYN Sonography I 459A-1 Advanced Obstetric & Gynecology Sonography I. A continuation in the study of obstetric & gynecology sonography to include pathologic, embryologic, and structural complications, clinical history, physical assessment, and the appropriate exam protocol. Prerequisite: RAD 359B with a minimum grade of C. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD459B - Adv OB & GYN Sonography II 459B-1 Advanced Obstetric & Gynecology Sonography II. A continuation in the study of obstetric & gynecology sonography to include pathologic, embryologic, and structural complications, clinical history, physical assessment, and the appropriate exam protocol. Prerequisite: RAD 459A with a minimum grade of C. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD464 - Cardiac Imaging in MRI 464-3 Cardiovascular Imaging in Magnetic Resonance Imaging. Lecture includes discussion of the imaging applications of the heart and coronary arteries. Review of related anatomy and common pathologies. Special approval needed from the instructor.

RAD474 - Advanced MRI Internship 474-6 Advanced MRI Internship. During this clinical internship, the student will be assigned to a selected clinical education center for the entire semester. During this semester, while performing routine MRI procedures, the student will perform MRI procedures of the heart, body, and extremities. Special approval needed from the instructor.

RAD476 - Research Project 476-4 Research Project. (Same as DH 476) This course requires the selection and investigation of a research topic culminating in a paper to satisfy the research requirement for the MGT/Ed option. Prerequisite: RAD 415.

RAD479A - Adv Abdominal Sonography I 479A-1 Advanced Abdominal Sonography I. A continuation in the study of abdominal sonography to include interventional, organ transplant, musculoskeletal, pediatric topics, clinical history, physical assessment, and appropriate exam protocol. Prerequisite: RAD 379B with a minimum grade of C. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD479B - Adv Abdominal Sonography II 479B-1 Advanced Abdominal Sonography II. A continuation in the study of abdominal sonography to include interventional, organ transplant, musculoskeletal, pediatric topics, clinical history, physical assessment, and appropriate exam protocol. Prerequisite: RAD 479A with a minimum grade of C. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD480 - The U.S. Health Care System 480-3 The U.S. Health Care System. (Same as DH 480, HCM 360) This course is a study of the major components which comprise the U.S. health care system. This course will focus primarily on basic terminology, history, settings, personnel, access to care, types of care, utilization of services, vulnerable populations and future challenges for the delivery of health care services. Students will closely review clinical aspects and terminologies as they relate to medical conditions, medical equipment, and medical procedures for the purposes of interacting successfully with health care administrators, physicians/providers of care, and patients. This is a labor intensive course requiring extensive out-of-class study. Restricted to the major or consent of school.

RAD481 - Org Behavior Healthcare Orgs 481-3 Organizational Behavior in Healthcare Organizations. (Same as DH 481, HCM 364) An evaluation of relationships in healthcare organizations. Study of the motivational factors of those focused on patient care vs. those focused on profits and how to modify behaviors to achieve proper balance. Environmental factors of the healthcare field are evaluated for their impact on the behavior and employee-management relations of healthcare professionals and patient care providers. Promotes effective planning and organizing within the complex and highly regulated healthcare

industry and assures alignment of organizational goals with the missions/visions/values as related to quality of patient life and organizational success. Restricted to SAH major/minor or with consent of SAH Academic Advisor.

RAD482 - Legal Aspects 482-3 Legal Aspects and Current Issues in Health Care. (Same as DH 482, HCM 388) Principles of law and the U.S. legal system are applied, in part, through case study and an exploration of current events, in the areas of health care management. Legal issues include malpractice, contracts, corporate liability, professional liability, patient rights, and the legal aspects of managed care.

RAD484 - Special Topics in MRI/MRA 484-3 Special Topics in MRI/MRA. Supervised readings of selected topics in MRI. Special approval needed from the instructor.

RAD489 - Pediatric Sonography 489-3 Pediatric Sonography. A study of neonatal and pediatric head, spine, hip, abdomen, and urinary systems anatomy, physiology, and pathophysiology. Topics will include patient care, integration of data, and imaging protocol. Restricted to RADS major or consent of school. Students must receive a grade of "C" or higher to advance within the Sonography Program.

RAD494 - Independent Study in MRI 494-1 to 6 Independent Study in Magnetic Resonance Imaging. The selection and investigation of a topic related to MRI. Special approval needed from the instructor.

RAD499 - Sonography Seminar 499-1 to 3 Sonography Seminar. This course is designed to prepare the student to challenge the national sonography certification examination(s). Professional development and career readiness topics are also addressed. Prerequisite: RAD 409B or RAD 459 or RAD 459A or RAD 479A with a minimum grade of C.

RAD510 - Sim/Cross Sectnl Anat/MD 510-2 Simulation and Cross Sectional Anatomy in Medical Dosimetry. This course covers the conventional and CT simulation techniques used in initiating radiation therapy for cancer patients. Identification of cross-sectional anatomy at different anatomical locations within the human body is also reviewed. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program.

RAD511 - Fund Health Care Systems 511-3 Fundamentals of Health Care Systems. (Same as MHA 511, MHI 511) This course provides a multi-disciplinary analysis and is designed to provide students with information pertaining to the issues surrounding access to care, medical technology, and the complex financial structures of the healthcare system. Students will extensively examine aspects of the complex healthcare system such as managed care, Medicare, Medicaid, pharmaceuticals, health promotion and disease prevention, and the quality of care.

RAD515 - Medical Dosimetry Clinical I 515-4 Medical Dosimetry Clinical I. This is the first course of a three course sequence. During the three course sequence, students will complete eight clinical rotations including Brachytherapy, Simulation, Gamma Knife, Treatment Aids, IMRT, External Beam, Physics, Special Measurements and QA. The length of these rotations varies from one to eleven weeks. During this course students will perform two to four of these rotations depending on the rotation schedule. While in the clinical setting students will observe and work directly with a medical dosimetrist. Emphasis is given on learning and understanding the role and responsibilities of a medical dosimetrist in the clinical setting. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program.

RAD516 - Cult Found/Theories of Educ 516-3 Cultural Foundations and Theories of Education. Seminar provides an examination of the historical, social, economic and psychological foundations of allied health education with emphasis given to the nature and role of education and training in preparing for the field of medical education. The objectives of this seminar will allow the student to explore the nature and theories of education, the behavioral aspects of education including the assumptions and practices which underlie education. Special approval needed from the instructor.

RAD520 - Physics/Medical Dosimetry I 520-3 The Physics of Medical Dosimetry I. This course covers the following topics: Radiologic Physics, production of x-rays, radiation treatment and simulation machines, interactions of ionizing radiation, radiation measurements, dose calculations, computerized treatment planning, dose calculation algorithms, electron beam characteristics, and brachytherapy physics and procedures. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program.

RAD521 - Rad/Imaging Sciences I 521-3 Advance Practice of Radiologic/Imaging Sciences I. This course will include a review of the following topics: Radiation physics, radiation biology, anatomy, pharmacology, human diseases/pathology, advanced imaging methods, advanced imaging modalities, and patient care.

RAD525 - Seminars in MD I 525-3 Seminars in Medical Dosimetry I. (Same as RAD 526) This course consists of various seminars/literature reviews associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is twenty weeks in length. Restricted to admission to the Medical Dosimetry Program.

RAD526 - Seminar Rad/Imaging I 526-3 Seminar in Radiologic/Imaging Sciences I. (Same as RAD 525) This course consists of various seminar/literature reviews associated with the radiologic/imaging sciences. Topics include imaging techniques, technological advances in the radiologic/imaging sciences, patient care trends, and the role of an imaging professional. This course is twenty weeks in length.

RAD530 - Essentials of Medical Dosimetry 530-2 The Essentials of Medical Dosimetry. This course covers the various quality assurance procedures performed in a radiation oncology department. Also included are various statistics topics to educate the student in becoming a good consumer of medical dosimetry research literature. Professional development, billing/coding, HIPAA, and professional service are also addressed. This course is twenty weeks in length. Prerequisite: A grade of C or better in RAD 510, RAD 515, RAD 520, and RAD 525.

RAD531 - Human Resources 531-3 Human Resources in Health Care. (Same as MHA 531, MHI 531) Describes the key human resource functions that play a significant role in the healthcare environment and focuses specifically on how those functions support management initiatives and accreditation and/or regulatory compliance. Extensive review of how the failure to systematically apply effective human resource strategies can result in organizational demise is conducted. Conduct a human resource audit. Explores the dynamic legal and regulatory environment and carefully examines how legislative changes influence the healthcare organization overall focusing particularly on those functions that are linked to patient satisfaction and balanced scorecards and/or benchmarking of provider performance.

RAD535 - Medical Dosimetry Clinical II 535-4 Medical Dosimetry Clinical II. This is the second of a three course sequence. During the three course sequence, students will complete eight clinical rotations including Brachytherapy, Simulation, Gamma Knife, Treatment Aids, IMRT, External Beam, Physics, Special Measurements and QA. The length of these rotations varies from one to eleven weeks. During this course students will perform two to four of these rotations depending on the rotation schedule. While in the clinical setting students will observe and work directly with a medical dosimetrist. Emphasis is given on learning and understanding the role and responsibilities of a medical dosimetrist in the clinical setting. This course is twenty weeks in length. Prerequisite: A grade of C or better in RAD 515.

RAD536 - Strategic Leadership in HC 536-3 Strategic Leadership in Healthcare. (Same as MHA 536, MHI 536) This course provides students with an examination of nature, function, and techniques of administration and supervision in HCOs. Topics include the ever-changing healthcare environment and trends impacting leadership competencies. Specific healthcare factors that influence organizing managing of varying health systems such as hospitals vs. ambulatory care. Focus will be given on the professional bureaucracy that is complex given regulatory issues, political factors, and the era of the informed patient.

RAD540 - Physics Medical Dosimetry II 540-3 The Physics of Medical Dosimetry II. This course covers the following topics: Imaging for radiation oncology, IMRT, stereotactic radiosurgery, special procedures, particle therapy, hyperthermia, and radiation safety. This course is twenty weeks in length.

RAD541 - Rad/Imaging Sciences II 541-3 Advance Practice of Radiologic/Imaging Sciences II. This course will continue to cover the same topics that were reviewed in RAD 521 but to a greater level of understanding. Topics include: Radiation physics, radiation biology, anatomy, pharmacology, human disease/pathology, advanced imaging methods, advanced imaging modalities, and patient care.

RAD545 - Seminars in MD II 545-3 Seminar in Medical Dosimetry II. (Same as RAD 546) This course consists of various seminars associated with radiation oncology. Topics include treatment techniques for

various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is twenty weeks in length.

RAD546 - Seminar Rad/Imaging II 546-3 Seminar in Radiologic/Imaging Sciences II. (Same as RAD 545) This course consists of various seminar/literature reviews associated with the radiologic/imaging sciences. Topics include imaging techniques, technological advances in the radiologic/imaging sciences, patient care trends, and the role of an imaging professional. This course is twenty weeks in length.

RAD550 - Medical Dosimetry Clinical III 550-2 Medical Dosimetry Clinical III. This is the third course of a three course sequence. During the three course sequence, students will complete eight clinical rotations including Brachytherapy, Simulation, Gamma Knife, Treatment Aids, IMRT, External Beam, Physics, Special Measurements and QA. The length of these rotations varies from one to ten weeks. During this course students will perform one to two of these rotations depending on the rotation schedule. While in the clinical setting students will observe and work directly with a medical dosimetrist. Emphasis is given on learning and understanding the role and responsibilities of a medical dosimetrist in the clinical setting. This course is ten weeks in length. Prerequisite: A grade of "C" or better in RAD 535.

RAD551 - Legal & Ethics 551-3 Legal and Ethical Fundamentals of Health Care. (Same as MHA 551, MHI 551) This course provides students with an analysis of the legal and ethical environment of the healthcare industry. Focused on the healthcare environment, the course closely examines the judicial process pertaining to torts, contracts, antitrust, corporate compliance, access to care, negligence, and professional liability. The nature of ethics in the multi-cultural healthcare environment is examined with analysis of the moral issues in healthcare. Restricted to Medical Dosimetry students.

RAD555 - Physics Med Dosimetry III 555-2 The Physics of Medical Dosimetry III. This course covers the following topics: MU calculations, point dose calculations and radiation biology. This course is ten weeks in length. Prerequisite: A grade of C or better in RAD 540.

RAD556 - Research 556-3 Individual Research in Healthcare. (Same as MHA 556) This course requires students to complete a research project in the field of healthcare based upon student interest and instructor approval. Each project will have a written paper as a final product and this paper will be submitted for publication, as approved by the instructor, in one of the professional journals within the field of healthcare. Restricted to Medical Dosimetry.

RAD560 - Sem in Medical Dosimetry III 560-2 Seminar in Medical Dosimetry III. This course consists of various seminars/literature reviews associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is ten weeks in length. Prerequisite: A grade of C or better in RAD 545.

RAD565 - Independent Study 565-1 to 6 Independent Study. Directed independent study in selected areas of medical dosimetry studies. Special approval needed from the Program Director.

RAD593 - Individual Research 593-6 Individual Research. (Same as MHA 593, MHI 593) A research course leading to the completion of a research paper that demonstrates the student's knowledge of research techniques. Research is based on the selection and investigation of a research topic culminating in a paper satisfying the research requirements for the Master of Science in Radiologic Sciences degree and is in accordance with the policies and guidelines as established by Southern Illinois University Carbondale's (SIUC) Graduate School. Prerequisite: RAD 556. Restricted to RADS majors or consent of Program Director.

RAD601 - Continuing Enrollment 601-1 Continuing Enrollment. This course is required to satisfy the Graduate School's requirement of continuous enrollment and is intended for those students who are enrolled in the program but cannot take a core academic course during a given semester. Prerequisite: Consent of Program Director.

Radiologic Sciences Faculty

Anderson, Shannon, D., Clinical Instructor, M.S.Ed., Southern Illinois University Carbondale, 2005.

Bro, Amy M., Clinical Instructor⁴, MSRS, Southern Illinois University Carbondale, 2017.
Collins, Kevin Scott, Professor and Director, Ph.D., RT(R)(T), CMD, Southern Illinois University Carbondale, 2011.
Grey, Michael, Professor, Ph.D., Southern Illinois University Carbondale, 2009.
Having, Karen M., Associate Professor, Emerita, RT(R), RDMS, M.S., Southern Illinois University Carbondale, 1996.
Hirsch, Brandon, T., Clinical Instructor, M.S., Southern Illinois University Carbondale, 2014.
Jensen, Steven, Professor, Emeritus, RT(R), Ph.D., Southern Illinois University Carbondale, 1987.
McKinnies, Richard C., Associate Professor, M.S.Ed., Southern Illinois University Carbondale, 2006.
Szekely, Rosanne, Assistant Professor, RT(R), M.S., Southern Illinois University Carbondale, 1995.
Walker, Jennifer N., Clinical Instructor, M.S.Ed., Southern Illinois University Carbondale, 2008.
Watts, Sandra J., Assistant Professor, MHA, University of St. Francis, 2013.

Recreation Professions

The Recreation Professions major prepares students for positions and careers in the recreation management, outdoor leadership and management, and therapeutic recreation field. The curriculum, built on a broad core, offers professional courses within the department and draws from many related majors for competencies and skills in the preparation of professionals for the recreation field. The curriculum emphasizes the practical and theoretical aspects of recreation by offering supervised field experience and internships in various recreational settings throughout Illinois and the nation.

In order to be admitted to practicum courses, students must have a grade point average of 2.25 and the consent of the instructor. Students who do not meet the College of Education and Human Services requirements must be screened and approved by the department undergraduate faculty.

Students majoring in recreation professions are required to complete 39 hours of University Core Curriculum courses, 37 hours of professional core courses and 44 hours of professional courses in at least one area of specialization. Electives for their chosen area of specialization must have advisor approval. A total of 79 hours beyond the University Core Curriculum is required. A grade of C or better is required in all Recreation prefix required courses. Students may not enroll in REC 300, 301, 303 and 305 more than two times.

Recreation Professions offers courses leading to specializations in therapeutic recreation, recreation management, and outdoor leadership and management.

Students majoring in recreation professions should meet early in their college careers with a faculty member in the department to identify their area of interest and recommended electives. Within the field of recreation, certifications may be required for employment in different interest areas and faculty will discuss these with interested students. All students are encouraged to obtain First Aid and/or Wilderness First Responder Certification. Students focusing on a therapeutic orientation should attempt to acquire either academic or practical experience related to physiological, psychological and sociological functioning and the concomitant effect of disability. As soon as possible, recreation majors will decide on one of the three specializations and elect courses for their area of specialization.

The Recreation Professions major prepares students for positions and careers in the recreation management, outdoor leadership and management, and therapeutic recreation field. The curriculum, built on a broad core, offers professional courses within the department and draws from many related majors for competencies and skills in the preparation of professionals for the recreation field. The curriculum emphasizes the practical and theoretical aspects of recreation by offering supervised field experience and internships in various recreational settings throughout Illinois and the nation.

In order to be admitted to practicum courses, students must have a grade point average of 2.25 and the consent of the instructor. Students who do not meet the College of Education and Human Services requirements must be screened and approved by the department undergraduate faculty.

Students majoring in recreation professions are required to complete 39 hours of University Core Curriculum courses, 37 hours of professional core courses and 44 hours of professional courses in at least one area of specialization. Electives for their chosen area of specialization must have advisor approval. A total of 79 hours beyond the University Core Curriculum is required. A grade of C or better is

required in all Recreation prefix required courses. Students may not enroll in REC 300, 301, 303 and 305 more than two times.

Recreation Professions offers courses leading to specializations in therapeutic recreation, recreation management, and outdoor leadership and management.

Students majoring in recreation professions should meet early in their college careers with a faculty member in the department to identify their area of interest and recommended electives. Within the field of recreation, certifications may be required for employment in different interest areas and faculty will discuss these with interested students. All students are encouraged to obtain First Aid and/or Wilderness First Responder Certification. Students focusing on a therapeutic orientation should attempt to acquire either academic or practical experience related to physiological, psychological and sociological functioning and the concomitant effect of disability. As soon as possible, recreation majors will decide on one of the three specializations and elect courses for their area of specialization.

Bachelor of Science Degree in Recreation Professions, College of Education and Human Services

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Major in Recreation Professions	81
ENGL 290 or ENGL 291	3
REC 300, REC 301, REC 302, REC 303, REC 305, REC 367, REC 380A,B, REC 490A,B,C	34
One of the specializations listed below	44
Total	120

Recreation Management Specialization

Degree Requirements	Credit Hours
REC 365, REC 375 or REC 445, REC 425, REC 465	12
ACCT 210 or ACCT 220	3
HE 334	3
ISAT 229 or CS 200B	3
Six hours selected from PSYC 301, PSYC 303, PSYC 304, PSYC 305, PSYC 307, PSYC 323, PSYC 333	6
Electives (May be subject to certification requirements)	17
Total	44

Outdoor Leadership and Management Specialization

Degree Requirements	Credit Hours
Core Outdoor Administrative Courses: Choose 3 of the following administrative classes: REC 330, REC 365, REC 425, REC 445, REC 465	9
Core Outdoor Leadership Courses: REC 426/427/428, REC 429, REC 430, REC 431, REC 432, REC 434 At least 3 credits from: REC 200, REC 201, REC 202, REC 203, REC 210, REC 220, REC 225, REC 230, REC 235, REC 240, REC 241, REC 245	21
Option A: Adventure Education Track: REC 401, REC 423, REC 433	9
Option B: Outdoor Industry Track: REC 375, MGMT 170, MKTG 304 or equivalent course approved by the REC faculty	9
Electives	5
Total	44

Therapeutic Specialization

Degree Requirements	Credit Hours
REC 404, REC 460, REC 461, REC 462	12
Six hours selected from REC 440A, REC 440B, REC 440C, REC 440D, REC 440E, REC 440F	6
PSYC 331 and PSYC 340	6
AH 241	4
AH 105	2
HE 311	3
Electives (in accordance with certification requirements)	11
Total	44

Recreation Professions Courses

REC200 - Backpacking 200-1 Backpacking. This course provides an introduction to the fundamental skills and knowledge in backpacking. Field trip required.

REC202 - Outdoor Fitness 202-1 Introduction to Outdoor Fitness. This course provides an introduction to outdoor fitness. Class time will focus on preparing students for a range of outdoor recreation activities. Field trips required.

REC203 - Mountain Biking 203-1 Introduction to Mountain Biking. This course provides an introduction to the foundational knowledge and skills of mountain biking. Instruction will take place in an outdoor setting. Field trips required.

REC210 - Leave No Trace 210-1 Leave No Trace Outdoor Ethics. This course provides an introduction to the fundamental skills and knowledge of Leave No Trace Outdoor Ethics. Field trip required.

REC220 - Canoeing 220-1 Canoeing. This course provides an introduction to the fundamental skills and knowledge in canoeing. Field trips required.

REC230 - Land Navigation 230-1 Land Navigation. This course provides an introduction to the fundamental skills and knowledge in land navigation. Field trips required.

REC240 - Rock Climbing 240-1 Rock Climbing. This course provides an introduction to the fundamental skills and knowledge in rock climbing. Field trips required.

REC241 - Rock Climbing II 241-1 Rock Climbing II: Advanced Top Rope Skills. This course provides an introduction to the knowledge and skills necessary for top rope climbing. This course focuses on top rope anchor construction and climbing safety. Field trip required. Introduction to Rock Climbing (REC 240) or prior climbing experience strongly recommended.

REC245 - Ecotherapy 245-1 Ecotherapeutic Recreation. This course explores the meaning of 'ecotherapy' in terms of leisure and recreation perspectives. Psychological stand points will be also discussed by extending the psycho-therapeutic context to include the natural environment in which the people live. This course will review various methods of practice that challenge the normal leisure paradigm and see a person not as an independent psychic entity but rather as an interactive element of the natural environment. This course combines fascinating experiences from cross-cultural sources as well as experimental evidences of research. In doing so, this course will demonstrate how a direct nature-body connection can be utilized toward the healing effect of leisure and recreation and will encourage students to facilitate their effective ecotherapeutic activity/program for people's well being.

REC246 - Trail Building 246-1 Introduction to Trail Building. This course provides an introduction to the fundamental skills and knowledge of trail building for outdoor recreation. Field trip required.

REC255 - Recreational Arts and Crafts 255-1 Recreational Arts and Crafts. This course focuses on facilitation of arts and crafts in the recreational setting. Emphasis is on teaching craft skills for the non-artist with an introduction to various craft techniques, materials and methods for populations including people with disabilities, geriatrics and children.

REC265 - Intro to Animal-Assist Therapy 265-1 Introduction to Animal-Assisted Therapy. This course will provide an overview of Animal-Assisted Therapy (AAT), and its use as an intervention for common health disorders. Topics include the history of AAT in a variety of treatment settings, common therapeutic animals and techniques, and ethical concerns when working with animals in therapeutic settings.

REC300 - Intro Rec & Leisure Services 300-3 Introduction to Recreation and Leisure Services. An introduction to the professional field of recreation. A study of the historical, philosophical, sociological, psychological, and economic development of leisure and recreation. Insight into the fundamental concepts, values, and functions of leisure and recreation as an individual emotional experience as well as a necessary part of community life.

REC301 - Leadership in Recreation 301-3 Leadership in Recreation. An examination of leadership theories and styles appropriate for activity leaders in recreation. Emphasis will be placed on leadership process and methodology as applicable to leisure service settings.

REC302 - Prog Des & Group Dynamics 302-3 Program Design and Group Dynamics. A study of essential elements and basic principles involved with the organization and administration of various types of recreation programs and services.

REC303 - Rec Individuals w/Disabilities 303-3 Recreation for Individuals with Disabilities. Philosophy and principles of recreation for individuals with disabilities as well as an investigation of programming/

activity alternatives. General physiological, psychological and social characteristics of various disabilities and societal and personal attitudes are explored.

REC305 - Recreation Pre-Practicum 305-1 Recreation Pre-Practicum. An introduction to the responsibilities and opportunities of field experience within the field of recreation. The course includes field experience identification and selection, resume preparation, letters of applications, interviewing, portfolio development, professional behavior and professional associations.

REC330 - Outdoor Recreation 330-3 Outdoor Recreation. This course provides an overview of outdoor recreation philosophy and principles while exposing students to outdoor pursuits, such as backpacking, land navigation, paddling, and rock climbing. Topics include outdoor pursuit techniques, safety procedures, and equipment management. Expenses for required field trip not to exceed \$20.

REC365 - Admin Rec & Leisure Services 365-3 Administration of Recreation and Leisure Services. Administrative procedures for parks and recreation. Topics include: organization, finance, personnel, facilities, program, public relations, and other areas.

REC366 - Admin Issues in Recreation 366-3 Workshop in Administrative Issues in Recreation. Designed to examine current administrative issues in recreation, such as practices and trends in budget and finance, legal aspects, grant writing, personnel practices and policies, and others. Prerequisite: REC 365.

REC367 - Research/Evaluation Rec 367-3 Research and Evaluation in Recreation. An introduction to methodological approaches to the scientific study of phenomena inherent to recreation and leisure. The course includes basic research and evaluation designs, research and evaluation report writing, analysis of current leisure research, and use of computers in leisure research and evaluation.

REC375 - Commercial Rec & Tourism 375-3 Commercial Recreation and Tourism. Problems of commercial recreation and tourism will be addressed in this class. Topics include: free enterprise, marketing, transportation industry, attractions, food and lodging industry and government's role in tourism.

REC377 - Campus Recreation 377-3 Overview of Campus Recreation. Focuses on the administration, organization, planning, implementation, and evaluation of programs and facilities in the campus recreation field. Specific topics addressed include historical and philosophical aspects, administrative practices, competitive and non-competitive programming, future trends and issues, budgeting, public relations, professional associations, and examination of individual characteristics of a variety of campus recreation.

REC380A - Recreation Fieldwork 380A-3 Recreation Fieldwork. Supervised leadership experiences in a public or private recreation setting. Only one fieldwork experience may be completed per semester. Students must complete fieldwork at two different sites (REC 380A, B). A minimum of 100 contact hours must be completed at the approved sites. In addition, students will complete an approved project. Prerequisite: REC 300, 301, 302, 303, 305. Special approval needed from the instructor and 2.25 grade point average.

REC380B - Recreation Fieldwork 380B-3 Recreation Fieldwork. Supervised leadership experiences in a public or private recreation setting. Only one fieldwork experience may be completed per semester. Students must complete fieldwork at two different sites (REC 380A, B). A minimum of 100 contact hours must be completed at the approved sites. In addition, students will complete an approved project. Prerequisite: REC 300, 301, 302, 303, 305. Special approval needed from the instructor and 2.25 grade point average.

REC385 - Readings in Recreation 385-1 to 2 Readings in Recreation. Selected readings in professional publications for the purpose of becoming acquainted with the types of research current in community, park, special populations, outdoor recreation, outdoor education, and related fields. Prerequisite: 15 hours in recreation. Restricted to REC majors.

REC386 - Problems in Recreation 386-1 to 2 Problems in Recreation. Designed to enable students to effectively request funds, request personnel, initiate new programs, or support recreation leisure services. Prerequisite: 15 hours in recreation.

REC401 - Environmental Education 401-3 Fundamentals of Environmental Education. (Same as AGRI 401 and FOR 401) An experiential course designed to help students interested in conservation education

understand and apply teaching principles for both inside and outside the classroom. The class includes certification in a nationally recognized environmental education program, and is suitable for students in natural resource, agriculture, recreation and education fields. Requires field trip transportation fee and supplemental expenditures not to exceed \$25 per course registration. Offered alternate (odd) years.

REC404 - Introduction to TR 404-3 Principles and Practices of Therapeutic Recreation. An introductory course for therapeutic recreation (TR) students. Concepts, history, and growth of TR as a healthcare profession, theories, treatment approaches to TR, an overview of the APIE process, and other professional issues will be introduced.

REC423 - Environmental Interpretation 423-3 Environmental Interpretation. (Same as AGRI 423 and FOR 423) Principles and technique of natural and cultural interpretation. Two hours lecture, three hours laboratory. Prerequisite: ten hours biological science or ten hours of recreation. Requires field trip transportation fee not to exceed \$40 per course registration.

REC425 - Plan & Design Rec Facilities 425-3 Planning and Design of Recreational Facilities. An examination of major design considerations for a variety of recreation facilities such as recreation centers, recreation sport complexes, parks, visitors centers, and natatoriums. Special attention will be given to long range facility planning. Prerequisite: REC 300, REC 301, REC 303. Restricted to senior or graduate standing.

REC426 - Land Based Recreation 426-3 Outdoor Adventure Land Based Pursuits. This course provides a combination of theoretical background and technical aspects of outdoor adventure based pursuits in a vertical environment and will emphasize hands-on skill development such as movement on rock, rope systems, anchors, rappelling and belaying, protection placement, and lead climbing philosophy. Taught biennially. Course fee and field trips required. Fee: \$100.

REC427 - Water Based Recreation 427-3 Outdoor Adventure Water Based Pursuits. This course provides a combination of theoretical background and technical aspects of outdoor adventure based pursuits in a water environment and will emphasize hands-on skill development such as equipment nomenclature, strokes, rescues, and reading/recognizing water features. Taught biennially. Course fee and field trips required. Fee: \$100.

REC428 - Challenge Based Recreation 428-3 Outdoor Adventure Challenge Based Pursuits. This course provides a combination of theoretical background and technical aspects of outdoor adventure based pursuits in a challenge environment and will emphasize hands-on skill development-spotting/belaying, equipment management, program design/sequencing, facilitation strategies, and course design and maintenance. Taught biennially. Course fee and field trips required. Fee: \$100.

REC429 - Planning & Risk in Outdoor Rec 429-3 Planning, Logistics, & Risk Management in Outdoor Recreation. This course provides an experiential approach in addressing the planning, logistics, and safety and risk management needed to design, implement, and prepare outdoor adventure based expeditions. Fulfills portions of the Wilderness Education Association's Planning and Logistics/Safety and Risk Management core competencies. Taught Biennially.

REC430 - Outdoor Living Skills 430-3 Outdoor Living Skills. This course provides a foundation to basic outdoor living skills in backcountry environments. Topics include basic camping skills, equipment and clothing selection and use, weather, health and sanitation, travel techniques, navigation, and decision making/problem solving. Fulfills the Wilderness Education Association's Outdoor Living core competency. Taught Biennially. Course fees and field trips required. REC 429 recommended before taking REC 430. Trip fee not to exceed \$350.

REC431 - Expedition Leadership 431-3 Expedition Leadership. This course focuses on professional leadership of highly adventurous wilderness trips. Emphasis is on development of leadership through sound judgment, decision-making, and teaching in a backcountry/wilderness environment on an extended expedition. Fulfills the Wilderness Education Association's Education and Leadership core competency. Taught biennially. REC 429 & REC 430 recommended before taking REC 431. Course fee and field trips required. Trip fees not to exceed \$750.

REC432 - OR Env Issues & Ethics 432-3 Environmental Issues and Ethics in Outdoor Recreation. This course will address the management and issues related to outdoor recreation and the importance of

developing a land ethic that will ensure future use of outdoor resources. The history, background, and development of the recreation ecology movement will be addressed. Fulfills the WEA's Environmental Integration core competency and LNT's Master Educator curriculum. Taught Biennially. Course fee and field trip required. Fee: \$35.

REC433 - Adventure Education 433-3 Adventure Education. This course provides a practical and theoretical background of adventure education. Topics that will be addressed and applied include the use of challenge and adventure in various situations, experiential education, activity sequencing, utilizing peak experiences, leadership styles and development, debriefing, and framing. Taught Biennially. Field trips required.

REC434 - Wilderness First Responder 434-3 Wilderness First Responder. This course addresses the practice of advanced medical techniques in a wilderness environment. The Wilderness First Responder is recognized as the industry standard for those who work in the backcountry or remote environments. Wilderness First Responder certification offered with successful completion. Course fee and field trips required. Fee: \$30.

REC435 - Advanced Outdoor Leadership 435-3 Advanced Outdoor Leadership. This course focuses on advanced leadership techniques for outdoor leaders. Emphasis is on evaluation and assessment of leaders in backcountry/wilderness environments. Utilizes the Wilderness Education Association's assessment and evaluation curriculum. Field trip required. Special approval needed from the instructor.

REC440A - TR Specific Popltns-Psyc Disrd 440A-3 Therapeutic Recreation for Specific Populations. Students will examine problems and characteristics of individuals with various disabilities. Emphasis is upon the role of therapeutic recreation with these specific populations in institutional and community settings-therapeutic recreation for individuals with psychological disorders. Prerequisite: REC 300, REC 301, REC 302, REC 304 or consent of instructor.

REC440B - TR Specific Popltns-Devlpt Dis 440B-3 Therapeutic Recreation for Specific Populations. Students will examine problems and characteristics of individuals with various disabilities. Emphasis is upon the role of therapeutic recreation with these specific populations in institutional and community settings: therapeutic recreation for individuals with developmental disabilities. Prerequisite: REC 300, REC 301, REC 302, REC 304 or consent of instructor.

REC440C - Therapeutic Recreation 440C-3 Therapeutic Recreation for Older Adults-Therapeutic Recreation for the Aged. (Same as GRON 440C) Students will examine problems and characteristics of individuals with various disabilities. Emphasis is upon the role of therapeutic recreation with these specific populations in institutional and community settings. Prerequisites: REC 300, REC 301, REC 302, REC 304 or consent of instructor.

REC440D - TR Specific Popltns-Crim Jstic 440D-3 Therapeutic Recreation for Specific Populations. Students will examine problems and characteristics of individuals with various disabilities. Emphasis is upon the role of therapeutic recreation with these specific populations in institutional and community settings: therapeutic recreation for those in the criminal justice system. Prerequisite: REC 300, REC 301, REC 302, REC 304 or consent of instructor.

REC440E - TR Specific Popltns-Physl Disb 440E-3 Therapeutic Recreation for Specific Populations. Students will examine problems and characteristics of individuals with various disabilities. Emphasis is upon the role of therapeutic recreation with these specific populations in institutional and community settings: therapeutic recreation for individuals with physical disabilities. Prerequisite: REC 300, REC 301, REC 302, REC 304 or consent of instructor.

REC440F - Ther Rec-Substance Abuse 440F-3 Therapeutic Recreation for Specific Populations. Students will examine problems and characteristics of individuals with various disabilities. Emphasis is upon the role of therapeutic recreation with these specific populations in institutional and community settings: therapeutic recreation in substance abuse treatment. Prerequisite: REC 300, REC 301, REC 302, REC 304 or consent of instructor.

REC445 - Outdoor Rec Management 445-3 Outdoor Recreation Management. This course addresses the philosophies and principles underlying the growth and development of outdoor recreation management. Outdoor recreation is examined in terms of historical values, long range planning, site

design, visitor needs, and environment impact. Course fee and field trip required. A fee of up to \$14 may be required.

REC446 - Trail Stewardship 446-3 Backcountry and Wilderness Trail Stewardship. This course provides a hands-on approach to aspects of volunteer trail stewardship in planning, implementing, and evaluating basic and advanced trail features and building projects. Rules, regulations, and potential hazards associated with working, traveling, and camping in the backcountry will be addressed. Students will be exposed to trail building tools and their proper usage and care. Field trips required. Special approval needed from the instructor.

REC460 - Therapeutic Rec Mgmt 460-3 Therapeutic Recreation Management. Management of therapeutic recreation programs in healthcare systems and other related human services areas. This course will cover a variety of issues such as U.S. healthcare systems and settings, organizational planning, financial and personnel management legal foundations, and advocacy and advancement of therapeutic recreation profession. Prerequisite: REC 300, REC 301, REC 302, REC 303, REC 304 or consent of department.

REC461 - TR Program Design & Evaluation 461-3 Program Design and Evaluation in Therapeutic Recreation. To equip the student with skills necessary to systematically design and evaluate programs. Philosophy and nature of systems, system analysis, assessment, individual treatment planning, implementation and evaluation of treatment programs. Prerequisite: REC 300, REC 301, REC 302, REC 303, REC 304, one section of REC 440, or consent of department.

REC462 - Facilitation Techs: Ther Rec 462-3 Facilitation Techniques in Therapeutic Recreation. This course is designed to provide an understanding of the basic processes and techniques of therapeutic recreation and to develop technical competencies necessary for the provision of quality therapeutic recreation services. Emphasis is on the skillful application of various processes and techniques to facilitate therapeutic changes in the client and the client's environment. Prerequisite: REC 304 or concurrent enrollment.

REC465 - Adv Admin Techniques in Rec 465-3 Advanced Administrative Techniques in Recreation. Designed to examine current administrative topics in recreation such as practices and trends in budget and finance, legal aspects, grant writing, personnel and policies and others.

REC475A - Workshop: Budget & Finance 475A-3 to 39 Recreation Workshop-Budget and Finance. Critical examination and analysis of innovative programs and practices.

REC475B - Workshop: Campus Rec Services 475B-3 to 39 Recreation Workshop-Campus Recreation Services. Critical examination and analysis of innovative programs and practices.

REC475C - Workshop: Commercial 475C-3 to 39 Recreation Workshop-Commercial. Critical examination and analysis of innovative programs and practices.

REC475D - Workshop: Maintenance 475D-3 to 39 Recreation Workshop-Maintenance of Areas and Facilities. Critical examination and analysis of innovative programs and practices.

REC475E - Workshop: Outdoor Recreation 475E-3 to 39 Recreation Workshop-Outdoor Recreation. Critical examination and analysis of innovative programs and practices. Field Trip fee: \$100.

REC475F - Workshop: Personnel 475F-3 to 39 Recreation Workshop-Personnel. Critical examination and analysis of innovative programs and practices.

REC475G - Workshop: Tech Advances 475G-3 to 39 Recreation Workshop-Technological Advances. Critical examination and analysis of innovative programs and practices.

REC475H - Workshop: Aging 475H-3 to 39 Recreation Workshop-Therapeutic Recreation-Aging. Critical examination and analysis of innovative programs and practices.

REC475I - Workshop: Dev Disability 475I-3 to 39 Recreation Workshop-Therapeutic Recreation-Developmental Disability. Critical examination and analysis of innovative programs and practices.

REC475J - Workshop: Emotional Illness 475J-3 to 39 Recreation Workshop-Therapeutic Recreation-Emotional Illness. Critical examination and analysis of innovative programs and practices.

REC475K - Workshop: Physical Disability 475K-3 to 39 Recreation Workshop-Therapeutic Recreation-Physical Disability. Critical examination and analysis of innovative programs and practices.

REC475L - Workshop: Prison/Detention 475L-3 to 39 Recreation Workshop-Therapeutic Recreation-Prisons and Detention Centers. Critical examination and analysis of innovative programs and practices.

REC475M - Workshop: Tourism 475M-3 to 39 Recreation Workshop-Tourism. Critical examination and analysis of innovative programs and practices.

REC485 - Practicum: Outdoor Education 485-2 to 12 Practicum in Outdoor Education. A supervised experience in a professional setting. Emphasis on administrative, supervisory, teaching, and program leadership in outdoor, conservation, or environmental education setting. Costs for travel are the responsibility of the student. Special approval needed from the instructor.

REC490A - Internship-Leisure Svcs Mgmt 490A-12 Internship in Leisure Services Management. Supervised practicum experience in a professional recreation setting. For undergraduate credit only. Must be taken during student's senior year. Prerequisite: completion of all requirements for major in recreation or consent of course coordinator; 2.25 grade point average. Special approval needed from the instructor.

REC490B - Internship-Outdoor Recreation 490B-12 Internship in Outdoor Recreation. Supervised practicum experience in a professional recreation setting. For undergraduate credit only. Must be taken during student's senior year. Prerequisite: completion of all requirements for major in recreation or consent of course coordinator; 2.25 grade point average. Special approval needed from the instructor.

REC490C - Internship-Therapeutic Rec 490C-12 Internship in Therapeutic Recreation. Supervised practicum experience in a professional recreation setting. For undergraduate credit only. Must be taken during student's senior year. Prerequisite: completion of all requirements for major in recreation or consent of course coordinator; 2.25 grade point average. Special approval needed from the instructor.

REC500 - Modern Concepts of Leisure 500-3 Modern Concepts of Leisure. This course explores the meaning of leisure, recreation, and play from a philosophical and psychological perspective. The historical and contemporary relationships among work, time, lifestyles and leisure are analyzed. In addition, the course attempts to develop students' viewpoints toward these topics in order that they formulate a philosophy of leisure. Required of all majors.

REC501 - Personnel in Leisure Services 501-3 Personnel in Leisure Services. This course will examine administrative issues regarding personnel in leisure delivery systems. Topics include: leadership theory, selection and training, legislation, collective bargaining, motivation, performance appraisal, power and gender.

REC502 - Revenue in Leisure Svc 502-3 Revenue Production for Leisure Service Organizations. An integrative view of revenue production for leisure service organizations. Numerous practices of generating income, such as fees and charges, facility rental, bonds, investments and public/private cooperative development will be examined in relationship to their ability to aid an organization in achieving its stated objectives.

REC503 - Manag/Mktg Leisure Services 503-3 Managing and Marketing Leisure Services. An examination of the critical functions of a manager in public and private leisure service organizations. Particular topics include goal and policy development, ethics, risk management, fiscal management and facility operations. Special attention is given to the leisure service managers role in marketing recreation.

REC508 - Trends/Issues: Leisure Service 508-3 Trends and Global Issues in Leisure Services. This course will study the various issues and trends that affect leisure delivery systems. This course will be the culminating seminar for graduate students in Recreation. Prerequisite: REC 500, REC 501, REC 502, REC 550.

REC524 - Pro Skills: Therapeutic Rec 524-3 Professional Skills in Therapeutic Recreation. This course focuses on professional skills necessary at the administrative and supervisory level. Program and staff development, conference presentations, and in-service training, grantsmanship, article writing, budgeting,

consultation and public relations comprise the core of the course. Prerequisite: REC 304, REC 460 or consent of department.

REC525 - Recreation: Special Population 525-3 Recreation for Special Populations. Planning, organizing, selecting, evaluating, and adapting activities to a variety of institutional and community settings. Prerequisite: REC 500 or consent of department.

REC526 - Sem Curr Issues Ther Rec 526-3 Seminar in Current Issues in Therapeutic Recreation. This course focuses on current issues in therapeutic recreation services including credentialing, accreditation, professional associations, legislation, research and other relevant issues. Prerequisite: REC 304 or consent of department.

REC550 - Research in Recreation 550-3 Research in Recreation. This course focuses on research concepts and methods (quantitative and qualitative). Students will complete a critical analysis of significant research in recreation or therapeutic recreation, and will develop a tentative research proposal. Prerequisite: REC 500.

REC560A - Seminar: Park & Community 560A-9 (3 per topic) Seminar in Recreation-Park & Community. Major issues, trends, and cultural, economic and social significance. Prerequisite: REC 500 or consent of department.

REC560B - Sem: Indiv w/Disabilities 560B-9 (3 per topic) Seminar in Recreation-Therapeutic Recreation and Individuals with Disabilities. Major issues, trends, and cultural, economic and social significance. Prerequisite: REC 500 or consent of department.

REC560C - Seminar: Commercial Rec 560C-9 (3 per topic) Seminar in Recreation-Commercial Recreation. Major issues, trends, and cultural, economic and social significance. Prerequisite: REC 500 or consent of department.

REC565 - Envir Issues Outdoor Rec 565-3 Environmental Issues in Outdoor Recreation. Seminar in environmental issues and problems that affect outdoor recreation. Content includes history of the environmental movement in relation to outdoor recreation and specific problems affecting recreation on national parks, forest and wildlife refuges. Special approval needed from the instructor.

REC575 - Project in Recreation 575-3 Project in Recreation. A project is a culmination of the Master's degree. It can be either a practice-based service product or an applied research study that does not require a thesis format. Examples of projects may include grant proposals, program development, curriculum development, landscape design, manuals, visual productions, web page development, organizing special events or fund raising. Special approval needed from the instructor.

REC580 - Readings: Leisure & Rec 580-1 to 6 Readings in Leisure and Recreation. Readings in selected topics in leisure and recreation under staff supervision. Not more than three hours may count toward Master's degree. Special approval needed from the instructor.

REC596 - Field Work in Recreation 596-1 to 6 Field Work in Recreation. Field work in an approved recreation department. Field work is in the student's field of interest. Supervision under approved agency officer in charge and a member of the department. Restricted to major in recreation. Special approval needed from the department.

REC599 - Thesis 599-3 Thesis. Selecting, investigating, and writing on a research topic under the personal supervision of a member of the department. Designed to help the student to develop ability to design, conduct, analyze and interpret research related to recreation and therapeutic recreation. Special approval needed from the department.

REC601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Recreation Professions Faculty

Colson, Tina, Senior Lecturer, M.S., Southern Illinois University, 2004.

Glover, James, Associate Professor, Emeritus, Ph.D., University of Maryland, 1980.

Glover, Regina, Associate Professor, Emerita, Ph.D., University of Maryland, 1983.

Kim, Jun, Assistant Professor, Ph.D., University of Utah, 2013.

Malkin, Marjorie J., Professor, Emerita, Ed.D., University of Georgia, 1986.

McEwen, Douglas, Professor, Emeritus, Ph.D., Michigan State University, 1973.

Weeks, Steven E., Senior Lecturer, Rh.D., Southern Illinois University Carbondale, 2003.

Rehabilitation Services

The major in Rehabilitation Services is part of the Rehabilitation Institute. The mission of the baccalaureate program in Rehabilitation Services is to prepare students to work with people with disabilities in a variety of settings in a wide range of positions. Students will learn the knowledge and skills necessary to assist individuals with disabilities to obtain and maintain meaningful employment, to live as independently as possible, to participate to the fullest extent possible in their communities, and to assume control of their lives. Students who graduate from the program will be prepared to fill various roles including developmental training coordinator, independent living specialist, employment specialist, habilitation program coordinator, rehabilitation coordinator, addictions professional, community-based training instructor, case manager, job placement specialist, work adjustment specialist, residential service director, and job coach supervisor. They will be employed in settings such as vocational training programs, residential and day treatment programs, independent living centers, community rehabilitation programs and addiction treatment programs. Students also will be well prepared to enter a master's degree program in rehabilitation or a related field.

Students majoring in Rehabilitation Services are required to complete 37 hours of University Core Curriculum courses, 45 hours in the major, and 38 hours of electives which are chosen by the student in conjunction with the advisor.

Students must maintain a 2.25 on a 4.0 scale overall and a 2.5 in major coursework to remain in the program and to graduate with a degree in Rehabilitation Services. Additionally, students must earn a C or better in all required Rehabilitation Services prefix courses.

The Capstone Option is available to students.

Bachelor of Science Degree in Rehabilitation Services, College of Education and Human Services

Degree Requirements	Credit Hours
University Core Curriculum Requirements	37
From within the Disciplinary Studies courses, students are encouraged to take PSYC 102.	
Requirements for Major in Rehabilitation Services	45
REHB 205, REHB 400, REHB 401, REHB 405, REHB 407, one of REHB 445 (A-H), REHB 452, REHB 461, REHB 474, REHB 493, REHB 495 ¹	
Electives by Advisement	38

Degree Requirements	Credit Hours
Suggestions include: CDS 301, CDS 385; HE 311, HE 410; PSYC 222, PSYC 301, PSYC 303, PSYC 304, PSYC 431; REC 303; REHB 419, REHB 445F, REHB 446, REHB 471; SOC 303, SOC 321; SPED 430	
Total	120

1 REHB 205 is available for credit in the Human Health area of the University Core Curriculum

Rehabilitation Services Minor

A minor in Rehabilitation Services consists of 5 courses (15 hours). Three of those courses are required. They include REHB 205, REHB 401, and REHB 400. Additionally, students must take two of the following courses: REHB 407, REHB 452, one of REHB 445B,E,F,H, or REHB 461. A GPA of at least 2.5 must be achieved in the rehabilitation courses required of the minor.

REHB 205 is available for credit in the Human Health area of the University Core Curriculum.

Rehabilitation Services Courses

REHB205 - Disability & Chronic Disorders 205-3 Disability and Chronic Disorders. (University Core Curriculum) This course focuses upon the common characteristics of physical, sensory, developmental, medical, and psychiatric disabilities. The course will discuss the definition and classification of each type of disability. Emphasized will be the diagnostic criteria and the biological, cognitive, behavioral, and social aspects of each particular disorder as they occur over the lifespan.

REHB205H - Disability & Chronic Disorders 205H-3 Disability and Chronic Disorders. (University Honors Program) (University Core Curriculum) This course focuses upon the common characteristics of physical, sensory, developmental, medical, and psychiatric disabilities. The course will discuss the definition and classification of each type of disability. Emphasized will be the diagnostic criteria and the biological, cognitive, behavioral, and social aspects of each particular disorder as they occur over the lifespan. Open to undergraduates. Available for Honors credit by special arrangement.

REHB312 - Behavior and Society 312-3 Behavior and Society. This course will provide students with an introduction to the principles of the science of behavior known as behavior analysis. The philosophical system known as behaviorism that underlies this area of study will be explored, as will the application of behavioral principles to a number of areas of social life.

REHB400 - Intro to Rehabilitation 400-3 Introduction to Rehabilitation. An introduction to the broad field of rehabilitation, to include the processes (services), facilities and personnel involved.

REHB401 - Disability Diversity Society 401-3 Disability, Diversity and Society. This course will address the relationship between prevailing societal attitudes and environmental designs and the opportunity of persons with disabilities to participate fully in society. It will examine the physical, mental, gender and cultural characteristics of persons with disabilities as determinants of their needs, values, aspiration and opportunities. How public policies can promote or limit inclusion and equal opportunities for persons with disabilities will also be addressed.

REHB401H - Disability Diversity & Society 401H-3 Disability, Diversity and Society. (University Honors Program) Open to undergraduates. Available for Honors credit by special arrangement.

REHB403 - Independent Living Rehab 403-3 Independent Living Rehabilitation. Survey of principles and methods of independent living for persons with disabilities with attention to client assessment for

rehabilitation, effective techniques for specific individuals with disabilities, and the variety of types and organization of independent living programs.

REHB405 - Intro: Aging & Rehab 405-3 Introduction to Aging and Rehabilitation. (Same as GRON 405) Introduction to the field of aging, including social, political, economic and legal issues pertinent to an aging society and rehabilitation.

REHB406 - Intro Behavior Analysis/Therpy 406-3 Introduction to Behavior Analysis and Therapy. A survey of the principles and procedures in behavior analysis and therapy and the scope of its application to human needs and problems. Prerequisite: REHB 312.

REHB406H - Behavior Analysis & Therapy 406H-3 Introduction to Behavior Analysis and Therapy. (University Honors Program) Open to undergraduates. Available for Honors credit by special arrangement.

REHB407 - Basic Practices in Rehab 407-3 Basic Practices in Rehabilitation. Provides students with the basic pragmatic knowledge and skill base necessary for effective day-to-day practice in entry-level rehabilitation positions. The material will include but is not limited to: the team process and being an effective team-member; clinical interviewing and relationship building skills; active communication; rights and advocacy, ethics and ethical decision-making; intervention and psychotherapy models; psychopharmacology; and record-keeping and information management. Not for graduate credit.

REHB419 - Multicultural Counseling 419-3 Multicultural Counseling in Rehabilitation. (Same as REHB 519) The major focus is on building multicultural competencies in working with the basic cultural, economic and psychosocial processes relative to the rehabilitation of people from diverse and underrepresented populations and societies.

REHB421 - Career Counseling 421-3 Introduction to Career Counseling and Employment Services. Relates the psychosocial meaning of work, process of vocational development, theories of occupational choice and labor market trends to current and innovative methods of job development, selective placement and follow-up with individuals with disability. Special approval needed from the instructor.

REHB445A - Alcohol & Drug Abuse 445A-3 Rehabilitation Services with Special Populations-Alcohol and Drug Abuse. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Special approval needed from the instructor.

REHB445B - Psychiatric Rehab 445B-3 Psychiatric Rehabilitation. This course will explore the history, philosophy, practice, current trends, and issues of psychiatric rehabilitation. Rehabilitation services that (A) develop an individual's skills and (B) provide environmental support for people with chronic mental illness will be examined. Emphasis will be placed on reaching vocational goals and optimal independent functioning for people with psychiatric disabilities. Special approval needed from the instructor.

REHB445C - Juvenile Offender 445C-3 Rehabilitation Services with Special Populations-Juvenile Offender. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Special approval needed from the instructor.

REHB445D - Mental Retardation 445D-3 Rehabilitation Services with Special Populations-Mental Retardation. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Special approval needed from the instructor.

REHB445E - Physically Disabled 445E-3 Rehabilitation Services with Special Populations-Physically Disabled. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Special approval needed from the instructor.

REHB445F - Public Offender 445F-3 Rehabilitation Services with Special Populations-Public Offender. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Special approval needed from the instructor.

REHB445G - Sensory Disabled 445G-3 Rehabilitation Services with Special Populations-Sensory Disabled. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Special approval needed from the instructor.

REHB445H - Developmental Disabilities 445H-3 Rehabilitation Services with Special Populations-Developmental Disabilities. Procedures and programs pertinent to the care and treatment of special populations. Three semester credits will ordinarily be granted for each unit. Special approval needed from the instructor.

REHB446 - Psychosocial Aspects of Aging 446-3 Psychosocial Aspects of Aging. (Same as GRON 446) Selected theories of psychosocial aspects of aging will be presented and the psychological and sociological processes of aging with the ensuing changes will be related to these conceptual frameworks. Included for discussion and related to field experience will be such concerns as stress reactions to retirement, physical disabilities, impact of reduced economic resources, and other personal-social changes in aging. Topics will address the knowledge base needed by students concerned with rehabilitation of aging clients in institutional, community and home settings. Therapeutic techniques to ameliorate these stresses will be an integral part of the course.

REHB447 - Biomedical Aspects of Aging 447-3 Biomedical Aspects of Aging. The aging process in a life-span developmental perspective; biological theories of aging, physiological changes in middle and old age and their effects on behavior, performance potential, and psychosocial functioning; senility and other age-related disabilities, their prevention and management; geriatric health maintenance and rehabilitation; institutionalization; death and dying.

REHB450 - Assistive Technology 450-3 Assistive Technology. (Same as REHB 550) This course reviews applications of assistive technology (AT) used by people with disabilities. The course covers various types of AT ranging from low to high technology. Additionally, the course explores devices that are commercially available and those that are customized. Strategies for modifying tasks rather than using technology are reviewed.

REHB452 - Individual Service Planning 452-3 Individual Service Planning. This course provides students with skills to develop individual service plans for individuals being served in community rehabilitation programs. Topics covered include person-centered assessment, functional community based training, and written treatment plans. Prerequisites: REHB 205, REHB 400, REHB 445 (one of A-H) with grades of C or better.

REHB453 - Personal/Family Life Styling 453-1 to 4 Personal and Family Life Styling. The academic and personal competencies that are characteristic of fully functioning, integrated persons within the context of our twentieth century environment will be systematically reviewed for adoption in everyday living as well as in professional functions. Participants will focus on and experience life styling theories, models, and skills for their own growth and development and learn to assess basic risk-factors in their rehabilitation clients and families prior to helping them program a more balanced, synergistic, and holistic approach to living. Special approval needed from the instructor.

REHB458 - Interventions Sub Use Addctns 458-3 Interventions for Substance Use Disorders and Behavioral Addictions in Special Populations. (Same as REHB 558) This course provides a broad understanding of issues and trends in substance use disorder and behavioral addiction treatment, in a multicultural and diverse society, with a specific focus on treatment methods that reflect the culture-specific values and treatment needs of clients. The course will include an analysis of current literature related to the cultural nuances of diverse client populations with substance use or addictive behavior disorders. Formal case presentations including diagnoses and issues of multiculturalism related to clinical work will be used to facilitate student learning. This course is crosslisted with REHB 558. Prerequisite: REHB 461 with a grade of B or better.

REHB461 - Intro to SUD 461-3 Introduction to Substance Use Disorders and Behavioral Addictions. Introduction to the field of substance use and behavioral addictions counseling with an overview of foundation topics underlying professional practice. This course will focus primarily on substance use and behavioral addiction models, medical and psychological consequences, drug classification systems, legislation, and other clinical and public policy issues that may be relevant to the field.

REHB466 - Addictions in Families 466-3 Substance Use, Behavioral Addictions, and the Family. (Same as REHB 566) Explores the foundations of interdisciplinary treatment and prevention services for families experiencing challenges related to substance use disorders and behavioral addictions. Students will acquire skills in their use of strength based, systemic approaches in working with families in group and individual counseling. The course will include an exploration of the changing concepts associated with the definition of family and challenges associated with non-traditional families. Ethical issues will be examined in addition to interagency collaborative practices. Prerequisite: REHB 461 with a grade of B or better.

REHB468 - Sexuality & Disability 468-3 Sexuality and Disability. Research and rehabilitation practices pertaining to the unique psychosexual aspects of various chronically disabling conditions will be examined.

REHB471 - SUD Treatment 471-3 Treatment, Recovery and Relapse Prevention. A comprehensive examination of assessment, diagnosis, referral, and treatment processes for substance use disorders and behavioral addictions. The course will cover treatment provided in a variety of settings. Students will acquire skills to provide person-centered treatment, recovery and relapse prevention services, using evidence based practices. The ASAM and the DSM V will be featured as treatment tools. Students will utilize case formulations to gain experience in the treatment plan development and implementation process. Ethical practices will be emphasized. Prerequisite: REHB 461 with a minimum grade of B.

REHB474 - Intro to Staff Supervision 474-3 Introduction to Staff Supervision. This course provides an introduction to the skills necessary to supervise staff in rehabilitation settings. Students will receive training and practice in using management styles, time management, delegation, disciplining, coaching, behavioral supervision, goal-setting, performance evaluation, giving feedback, keeping documentation, listening, conflict resolution and facilitating meetings. Not for graduate credit. Prerequisite: REHB 400.

REHB479 - Technical Writing in Rehab 479-3 Technical Writing in Rehabilitation. Fundamentals of writing skills for rehabilitation specialists, including preparation and drafting of program/grant proposals, vocational evaluation/work adjustment reports, news releases and other publicity materials. Special approval needed from the instructor.

REHB490 - Readings in Rehabilitation 490-1 to 6 (1 to 3 per semester) Readings in Rehabilitation. Supervised readings in selected areas. Special approval needed from the instructor.

REHB493 - Applied Research 493-3 Applied Research in Professional Rehabilitation Practice. This course will provide students with the skills necessary to act as critical consumers of rehabilitation-related research. It will also provide students with the analytical skills necessary to apply the logic of research methodology to their work in implementing evidence based practices with consumers. Emphasis will be on developing student capacity to complete focused, topical reviews of the rehabilitation literature, effectively evaluate research methodology and practices and determine appropriateness of new approaches for application in the field. Prerequisites: REHB 205, REHB 407 with grades of C or better.

REHB493H - Clinical Evaluation 493H-3 Clinical Evaluation. (University Honors Program) Open to undergraduates. Available for Honors credit by special arrangement.

REHB494 - Work Experience in Rehab 494-1 to 12 Work Experience in Rehabilitation. Credit granted for work experience in rehabilitation. Rehabilitation 494 and 594 both cannot be counted for a graduate degree; only one or the other can satisfy requirements toward a master's degree. Graded S/U only. Special approval needed from the department.

REHB495 - Internship in Rehabilitation 495-3 to 12 Internship in Rehabilitation. Supervised field experience in an agency or organization providing rehabilitation services. Not for graduate credit. Prerequisite: satisfactory completion of all other required undergraduate Rehabilitation courses, and minimum GPA of 2.5 in required Rehabilitation courses. P/F grading.

REHB498 - Special Topics 498-3 Special Topics in Rehabilitation Research and Practice. The topics in this course will be variable and will focus on current challenges in the rehabilitation field. Students will explore current research, evidence based practice and public policy as they pertain to the topic. Specific attention will be directed to how these topics may pose potential ethics/professional challenges and/or

challenges for consumer advocacy or how the topic may represent new, innovative opportunities for the field.

REHB499H - Honors in Rehab Services 499H-3 to 6 Senior Hours in Rehabilitation Services. Intensive study in selective areas for students qualified for honors work in Rehabilitation Services. A research paper or equivalent will be required. Not for graduate credit. Prerequisites: REHB 205H, 401H, 406H, 493H. Special approval needed from the department.

REHB501 - Interviewing and Skills 501-3 Introduction to Interpersonal Skills Development in Rehabilitation Counseling. (Same as COUN 500) Focuses upon facilitative interpersonal communication skills necessary in Rehabilitation Counseling Practices. The course provides theory and practice in facilitative interpersonal communication in counseling, behavior therapy, and administrative services. Included is pre-practicum orientation. Special approval needed from the instructor.

REHB504 - Foundation Rehab Research 504-3 Foundations of Rehabilitation Research. This course includes: the logic of scientific inquiry; the concepts of research questions and hypotheses; the notion of variables; the relationship among theoretical constructs, operationalism, and measurement instrument reliability and validity; the concepts of control, internal validity and casual inference; sampling methods and external validity; and experimental and descriptive research. Restricted to enrollment in Ph.D. degree program or consent.

REHB513 - Med/Psycho-Social:Disability 513-1 to 4 Medical and Psycho-Social Aspects of Disability. A review of the impact of disease and trauma on the human system with special attention on the effects physical limitations and socio-emotional correlates have on human functioning and the rehabilitation process. Special approval needed from the department.

REHB519 - Multicultural Counseling 519-3 Multicultural Counseling in Rehabilitation. (Same as COUN 545, REHB 419) The major focus is on building multicultural competencies in working with the basic cultural, economic and psychosocial processes relative to the rehabilitation of people from diverse and underrepresented populations and societies.

REHB520 - Clinical Supervision 520-3 Clinical Supervision in Rehabilitation Seminar. This course is designed to prepare doctoral and advanced graduate students with an overview of theory, research, and methods of clinical supervision in Rehabilitation. Special approval needed from the instructor.

REHB521 - Vocational Dev & Placement 521-3 Vocational Development and Placement. (Same as COUN 542) Relates the psychosocial meaning of work, process of vocational development, theories of occupational choice and labor market trends to current and innovative methods of job development, selective placement and follow-up with individuals with disability. Special approval needed from the instructor.

REHB530 - Assessment 530-3 Assessment Procedures in Rehabilitation Counseling. (Same as COUN 544) Review of fundamental bases of measurement, criteria for evaluating tests, exposure to representative instruments in major categories, and use of test and work samples in assessing the functioning abilities and work potential of individuals with disabilities to seek and hold gainful employment. Special approval needed from the instructor.

REHB531 - Ind Assess Proc in Rehb 531-3 Individual Assessment Procedures in Rehabilitation. Through familiarization and practice with independent assessment devices used in program selection and job placement of individuals with various handicaps. Special approval needed from the instructor.

REHB533 - Vocational Appraisal 533-3 Vocational Appraisal. An extensive exposure to instruments designed for use with vocational rehabilitation clients. Administration and interpretation of a wide variety of instruments used to gain information to be used in planning for vocational development. Both didactic and experiential to include consideration of information obtained from interviews, tests, and other diagnostic techniques. Special approval needed from the instructor.

REHB550 - Assistive Technology 550-3 Assistive Technology. (Same as REHB 450) This course reviews applications of assistive technology (AT) used by people with disabilities. The course covers various types of AT ranging from low to high technology. Additionally, the course explores devices that

are commercially available and those that are customized. Strategies for modifying tasks rather than using technology are reviewed.

REHB551 - Counseling Theory & Practice 551-3 Rehabilitation Counseling: Theory and Practice. (Same as COUN 541) A didactic and experiential analysis of the underlying theory and techniques of individual and group counseling of individuals with disabilities. Special approval needed from the instructor.

REHB558 - SUD Special Populations 558-3 Interventions for Substance Use Disorders and Behavioral Addictions in Special Populations. (Same as REHB 458) This course provides a broad understanding of issues and trends in substance use disorder and behavioral addiction treatment, in a multicultural and diverse society, with a specific focus on treatment methods that reflect the culture-specific values and treatment needs of clients. The course will include an analysis of current literature related to the cultural nuances of diverse client populations with substance use or addictive behavior disorders. Formal case presentations including diagnoses and issues of multiculturalism related to clinical work will be used to facilitate student learning. Prerequisite: REHB 461 with a grade of B or better.

REHB560 - Private Sector Rehab 560-3 Private Sector Rehabilitation. A comprehensive introduction to many of the unique characteristics of rehabilitation services offered within the private-for-profit sector which can be applied by practitioners on a national basis.

REHB566 - SUD and the Family 566-3 Substance Use, Behavioral Addictions and the Family. Explores the foundations of interdisciplinary treatment and prevention services for families experiencing challenges related to substance use disorders and behavioral addictions. Students will acquire skills in the use of strength based, systemic approaches in working with families in group and individual counseling. The course will include an exploration of the changing concepts associated with the definition of family and challenges associated with non-traditional families. Ethical issues will be examined in addition to interagency collaborative practices. Prerequisite: REHB 461 with a grade of B or better.

REHB569 - Lifespan Issues in Autism 569-3 Lifespan Issues in Autism. The goal of this course is to review and examine a wide variety of issues related to autism. Topics are explored from multiple perspectives in order to gain insight into the unique needs of individuals with autism across the lifespan. The course provides opportunities to analyze current knowledge about autism and identify profitable directions through which professionals can improve existing approaches and influence care provision. Special approval needed from the instructor.

REHB570 - Rehab Administration 570-3 Rehabilitation Administration. Problem solving approach to current issues in organizational structure and management functions in public and voluntary rehabilitation agencies, decision making, leadership, program development and evaluation.

REHB571 - Adv Disability Seminar 571-3 Advanced Disability Seminar. Specifically, this seminar reviews the historical and philosophical bases of rehabilitation; the evolution of rehabilitation counselor roles and functions; disability models; rehabilitation service delivery models; vocational rehabilitation and career theorists; serving underserved persons, and facilitating acceptance of varying disabilities of those we serve. Restricted to doctoral students or consent of instructor.

REHB573 - Program, Budget & Commun Res 573-3 Programming, Budgeting, and Community Resources. Designed to prepare the student to develop and operate comprehensive or specialized rehabilitation programs with special attention to resource development, fiscal management, and community and public relations. Prerequisite: REHB 570 or consent of instructor.

REHB574 - Staff Training & Development 574-3 Staff Training and Development. This course prepares the student to design, implement, and supervise an institutional program to train staff in methods of direct service to the institution's clients. Each student will actually design and submit a program through simulation. Lecture/workshop format.

REHB575 - Case Management in Rehab Couns 575-4 Case Management in Rehabilitation Counseling. Basic procedures in providing and coordinating available human services based on individual need in the context of a professional-client relationship, and the basics of recording and reporting such services. Special approval needed from the instructor.

REHB576 - Dev,Superv: Rehab Employees 576-2 to 3 Development and Supervision of Rehabilitation Employees. Current and progressive supervisory practices in rehabilitation with emphasis on employee development through in-service training, periodic evaluation and related methods. Special approval needed from the instructor.

REHB577 - Philosophy Science Iss Rehab 577-3 Philosophy of Science Issues in Rehabilitation. This course will explore the central questions in the philosophy of science as they pertain to the field of rehabilitation, including, but not limited to demarcation criterion, science vs. pseudoscience, scientific revolutions, inductive vs. deductive logic and theory building, and moral, cognitive, and contextual values in science. The issues will be explored within the context of research and theory in rehabilitation.

REHB578 - Program Eval in Rehab 578-3 Program Evaluation in Rehabilitation. An analysis of the development and utilization of a program evaluation system in rehabilitation settings with focus given to system design, monitoring techniques and service program development. Students will be trained in the advanced practice of program evaluation techniques and their application to rehabilitation settings. Special approval needed from the instructor.

REHB579 - Adv Fiscal Mgmt in Rehab 579-3 Advanced Fiscal Management in Rehabilitation. Application of fund and functional accounting in rehabilitation to include fiscal reporting and record keeping, fiscal planning and management in rehabilitation. Prerequisite: REHB 570 and REHB 573.

REHB580 - Prof,Comm Relations:Rehab 580-3 Professional and Community Relations in Rehabilitation. Examination of the linkages and needs of rehabilitation programs and agencies in the area of community and professional relations, with special reference to the role of administrator. Application of marketing principles to the management of external relations in rehabilitation settings. Special approval needed from the instructor.

REHB581 - Pro Issues in Rehab 581-3 Professional Issues in Rehabilitation. Focus is on legal and ethical issues and issues related to legislative and public policy formulation. Implications for rehabilitation programs, practice and research are emphasized.

REHB582 - Sem. in Rehab Services 582-3 Seminar in Rehabilitation Services. Special consideration of factors in the organization and management of rehabilitation services. Special approval needed from the instructor.

REHB583 - Seminar: Work Evaluation 583-1 to 4 Seminar in Work Evaluation. Select attention to procedures/models for assessing work readiness of personnel with disabilities. Special approval needed from the instructor.

REHB585A - Sem:Counsel/Coord Services 585A-1 to 4 Seminar in Counseling/Coordination Services-Guided Imagery. Consideration of special issues in counseling and delivery of services. Special approval needed from the instructor.

REHB585B - Group Counseling 585B-1 to 4 Seminar in Counseling/Coordination Services-Group Counseling in Rehabilitation. (Same as COUN 543) Consideration of special issues in counseling and delivery of services. Special approval needed from the instructor.

REHB586 - Sem:Job Develop/Placement 586-3 Seminar in Job Development and Placement. Consideration of special issues in job development and placement philosophy, techniques and research concerning individuals with disabilities. Special approval needed from the instructor.

REHB587 - Sem:Correlates Disability 587-3 Seminar in Correlates of Disability. A systematic analysis of the behavioral socio-cultural implication of disabling conditions. Emphasizes the rehabilitation process in remediation of debilitating conditions. Prerequisite: REHB 513 or consent of instructor.

REHB588 - Sem: Research in Rehab 588-3 Seminar in Research in Rehabilitation. Advanced seminar focusing upon specialized and advanced topics in research in rehabilitation. This course is designed to prepare doctoral students in rehabilitation with the special tools needed to carry out doctoral dissertation and other advanced research projects. Special approval needed from the instructor.

REHB589 - Profsnl Seminar in Rehab 589-1 to 18 (1 per semester) Professional Seminar in Rehabilitation. The course involves advanced level presentations focusing on current research, applied

practices, and innovations in rehabilitation. Presentations are made by faculty, graduate students and guest experts. A minimum of four semester hours required for Doctor of Rehabilitation degree.

REHB590 - Coexisting Disability 590-3 Coexisting Disabilities: Alcohol, Drugs, and Disability. An intensive analysis of the impact of alcohol and other drug abuse (AODA) on the lives of persons with disabilities. Additional focus of the impact of AODA on case management and the rehabilitation service delivery system. Restricted to doctoral students in rehabilitation or consent of instructor.

REHB592 - Profsnl Supervision: Rehab 592-1 to 16 Professional Supervision in Rehabilitation. Experience provided in the supervision of research, teaching, and rehabilitation services. No more than four hours may be taken in any semester. Restricted to doctoral student in rehabilitation. Special approval needed from the instructor.

REHB593A - Rehabilitation Research 593A-1 to 18 Research in Rehabilitation Counseling. (Same as COUN 547) Systematic investigation of factors and procedures relevant to rehabilitation. No more than six hours may be counted toward the Master's degree. To facilitate knowledge/skill acquisition for the rehabilitation professional in becoming a knowledgeable consumer of rehabilitation research. To facilitate the completion of the Master's project. Special approval needed from the instructor.

REHB594A - Practicum: Rehab Admin 594A-1 to 12 Practicum in Rehabilitation-Administration. Supervised experiences in agencies in rehabilitation. Rehabilitation facilities management/supervision, in planning, programming and evaluation. Restricted to admission to the specific degree program.

REHB594B - Prac:Behav Analysis&Ther 594B-1 to 12 Practicum in Rehabilitation-Behavior Analysis and Therapy. Supervised experiences in agencies in rehabilitation. Behavior analysis and therapy. Application of behavioral analysis/methods in human treatment and in management. Restricted to admission to the specific degree program.

REHB594C - Practicum: Rehab Counseling 594C-1 to 12 Practicum in Rehabilitation-Counseling. Supervised experiences in agencies in rehabilitation. Development of counseling skills with individuals and groups to include work related functions. Prerequisite: REHB 501, REHB 551, and REHB 589. Restricted to admission to the specific degree program.

REHB595A - Internship in Rehab 595A-1 to 12 Internship in Rehabilitation. Extended practice in rehabilitation settings cooperatively guided and supervised by agency staff and university faculty. Graded S/U only. Prerequisite: appropriate degree specific practicum. Special approval needed from the department.

REHB595B - Intern Rehab Counseling 595B-1 to 12 Internship in Rehabilitation-Counseling. Development of advanced counseling skills with individuals with disability and other work-related functions. Graded S/U only. Prerequisite: REHB 594C.

REHB599 - Thesis 599-1 to 6 Thesis. Special approval needed from the instructor.

REHB600 - Dissertation 600-1 to 30 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Rehabilitation degree. Restricted to doctoral candidate in rehabilitation.

REHB601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

REHB699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Rehabilitation Services Faculty

Al-Ani, Salim S, Assistant Professor, Ph.D., Florida State University, 2014.
Austin, Gary, Professor, Emeritus, Ph.D., Northwestern University, 1973.

Beck, Richard J., Associate Professor, Emeritus, University of Wisconsin, 1990.
Benshoff, John J., Professor, Emeritus, Ph.D., University of Northern Colorado, 1988.
Blache, Stephen E., Professor, Emeritus, Ph.D., The Ohio University, 1970.
Bordieri, James E., Professor, Ph.D., Emeritus, Illinois Institute of Technology, 1980.
Boyer, Valerie E., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2006.
Bryson, Seymour L., Professor, Emeritus, Ph.D., Southern Illinois University, 1972.
Crimando, William, Professor, Ph.D., Michigan State University, 1980.
Cuvo, Anthony J., Professor, Emeritus, Ph.D., University of Connecticut, 1973.
Davis, Paula K., Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 1989.
Dixon, Mark R., Professor, Ph.D., University of Nevada, 1998.
Falvo, Donna R., Professor, Emerita, Ph.D., Southern Illinois University, 1978.
Flowers, Carl R., Professor and Director, Ph.D., Southern Illinois University Carbondale, 1993.
Franca, Maria Claudia, Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2006.
Greene, Brandon F., Professor, Emeritus, Ph.D., Florida State University, 1979.
Grenfell, John E., Professor, Emeritus, Ed.D., Oregon State University, 1966.
Hoshiko, Michael S., Professor, Emeritus, Ph.D., Purdue University, 1957.
Jowett Hirst, Erica S., Assistant Professor, Ph.D., University of Kansas, 2014.
Koch, D. Shane, Professor, Ph.D., Southern Illinois University Carbondale, 1999.
Lehr, Robert P., Jr., Professor, Emeritus, Ph.D., Baylor University, 1971.
Nichols, Jane L., Assistant Professor, Ph.D., Michigan State University 2007.
Poppen, Roger L., Professor, Emeritus, Ph.D., Stanford University, 1968.
Redner, Ryan N, Assistant Professor, Ph.D., Western Michigan University, 2012.
Rehfeldt, Ruth Anne, Professor, Ph.D., University of Nevada, 1998.
Rubin, Stanford E., Professor, Emeritus, Ed.D., University of Illinois, 1968.
Schultz, Martin C., Professor, Emeritus, Ph.D., University of Iowa, 1955.
Simpson, Kenneth O., Associate Professor, Emeritus, Ph.D., University of Nebraska-Lincoln, 1995.
Smith, Linda McCabe, Associate Professor and Associate Chancellor, Ph.D., Southern Illinois University Carbondale, 1994.
Taylor, Darrell, Associate Professor, Emeritus, Ph.D., University of South Florida, 1992.
Upton, Thomas D., Professor, Ph.D., The University of Iowa, 2000.
Vieceli, Louis, Associate Professor, Emeritus, M.S.Ed., Southern Illinois University, 1959.
Wright, W. Russell, Associate Professor, Emeritus, Ph.D., Southern Illinois University, 1974.

Radio, Television, & Digital Media

The Department of Radio, Television, & Digital Media prepares students for positions in the communications sector. The program combines practical and analytical study in producing television, video, animation, audio and radio, together with electronic journalism, the global media industries, the music business, and research on traditional and emerging media.

All Radio, Television, & Digital Media students are required to maintain an overall 2.0 grade point average in the major. If a Radio, Television, & Digital Media student does not achieve a 2.0 grade point average in the major in any one semester, that student is subject to departmental warning. Students who are on departmental warning and do not earn an overall 2.0 grade point average in Radio, Television, & Digital Media courses in a subsequent semester will be placed in a status of departmental dismissal. A student who has been placed on collegiate dismissal will be transferred to undecided Mass Communication or may seek transfer to another University program if the student has an overall SIU grade point average of 2.0. A dismissed student may appeal to the Departmental Undergraduate Committee for reinstatement into the program.

Enrollment in Radio, Television, & Digital Media courses may be canceled for students who do not attend the initial class session of the semester. Fees will be assessed for supplies and materials in some courses. Students should inquire about fee amounts before registering.

Each student enrolled in the Radio, Television, & Digital Media program must declare a specialization in one of the areas described below before progressing to any Radio, Television, & Digital Media course beyond RTD 200 and 201.

1. Radio, Television, & Digital Media students must receive a grade of B or better in ENGL 101 (LING 101) and ENGL 102 (LING 102). If an RTD student does not receive a grade of B or better in these courses, they will need to take ENGL 290, ENGL 291, or ENGL 300 and receive a grade of C or better.
 2. Students must receive a grade of C or better in both RTD 200 and RTD 201 before taking any other RTD courses. RTD 200 and RTD 201 can only be repeated one time.
 3. Grades of C or better are required in all Radio, Television, & Digital Media courses in order to count towards the major or minor and to satisfy prerequisite requirements.
- Transfer students must complete a minimum of 21 hours in Radio, Television, & Digital Media courses at the University to earn a degree.

Bachelor of Arts Degree in Radio, Television, & Digital Media, College of Mass Communication & Media Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Language Requirement - Foreign language or approved substitute.	6
Requirements for Major in Radio, Television, & Digital Media	39
RTD 200, RTD 201, RTD 308, RTD 393, one RTD Media Studies Course, one JRNL or CP course beyond the core curriculum	18
Approved specialization coursework	21
Minor in Related Area	15
General Electives	21
Total	120

Digital Media Arts and Animation Specialization

In Digital Media Arts and Animation, students choose courses centered on digital art creation, creative storytelling, and computer animation. Digital media artists and animators write, design, and create computer animation, games, digital audio, and video for delivery across an array of media platforms. Through digital methods and innovative forms, students in the Digital Media Arts and Animation specialization are able to creatively explore and critically comment on the arts, content, media theories, and technologies that are shaping the future of media.

Required writing course either: RTD 383 Writing for Media Arts or JRNL 201 Writing Across Platforms

Select three of the following courses:

RTD 331 Digital Graphics Foundations
 RTD 361 Sound Mix in Popular Culture
 RTD 363 Radio/Audio Production
 RTD 461 Visual Effects in Post
 RTD 487 3D Animation I
 RTD 488 3D Animation II
 RTD 490 3D Animation III

CP 454 Approaches for the Animation Stand
CP 470A (History of Animation)
Plus nine hours of Radio, Television, & Digital Media Electives

Electronic Journalism Specialization

Classes are taught by industry professionals who incorporate history, ethics, legal issues and in depth reporting into the wide ranging curriculum. Students report, shoot, and edit their own stories using the latest equipment and software programs. Most students in Electronic Journalism work as “one man band” reporters. They produce a live half hour newscast on our PBS station, including weather and sports. Students also produce in depth and investigative reports which air on the news show. Stories also run on our online site which students also produce. Many students take advantage of the department’s excellent internship programs.

Required Courses:

RTD 310 (3 hours) – News Writing for Electronic Media
RTD 311 (3 hours) – Audio Journalism for Electronic Media (preq. RTD 310)
RTD 370 (3 hours) -Television News Reporting (preq. RTD 310)
RTD 470 (3 hours) – TV News Field Prod.(preq. RTD 370)
RTD 477 (3 hours) – Investigative Reporting
Plus 6 hours of Radio, Television, & Digital Media Electives

Media Industries Specialization

Students in Media Industries work at the intersection of media creativity, technology and business and learn about the broad structures and specific practices of film, television, radio, music, gaming, Internet and mobile media. Classes prepare students for entry-level and executive-track positions at major studios, network and cable television outlets, in the music business, and at emerging media companies that create video games, Internet apps and mobile content.

Required Courses:

RTD 3____ (3 hours) (approved 300 level)
RTD 3____ (3 hours) (approved 300 level)
RTD 3____ (3 hours) (approved 300 level)
RTD 4____ (3 hours) (approved 400 level)
Plus 9 hours of Radio, Television, & Digital Media Electives

Radio/Audio Specialization

Students in Radio/Audio develop their creative talents inside learning environments that unify critical listening and recording fundamentals from a wide variety of professional, artistic and historical viewpoints. Courses in the Audio Arts range from the commercial audio industries, sound and moving image and special topics courses in sound art and documentary radio. With the aid of our talented faculty, students learn to create and exhibit their projects on today’s technology by using our professional studios and computer labs.

Required Courses:

RTD 3____ (3 hours) (approved 300 level)
RTD 3____ (3 hours) (approved 300 level)
RTD 3____ (3 hours) (approved 300 level)
RTD 4____ (3 hours) (approved 400 level)
Plus 9 hours of Radio, Television, & Digital Media Electives

Electronic Sports Media Specialization

Students in the Sports Media Specialization study in one of two tracks: Sports Production and Sports Journalism. In the Sports Production track students learn the fundamentals of live event video production including site surveys, planning, producing and directing a variety of sporting events. The Sports Journalism track teaches the techniques of covering sporting events and issues, interviewing participants, and live game coverage. Students in both tracks work together to produce sports oriented and game telecasts.

Required courses for Sports Production track:

JRNL 201, Writing Across Platforms

RTD 365B, Multi-Camera Production

RTD 321, Sports, Media and Society

RTD 479, Multi-Camera Field Production

Plus nine hours of Radio, Television, & Digital Media Electives

Required courses for Electronic Sports Media - Broadcast Journalism track:

JRNL 201, Writing Across Platforms

RTD 310, News Writing for Electronic Media

RTD 312, Electronic Sports Journalism

RTD 321, Sports, Media and Society

RTD 370, Television News Reporting

RTD 470, Television News Field Production

Plus three hours of Radio, Television, & Digital Media Electives

Television/Video Production Specialization

Students who study Television/Video Production at SIU learn how to light, shoot and edit professionally, and how to tell compelling stories that make contact with audiences. Courses in field and studio use state-of-the-art equipment to prepare students to take positions in the industry, and students have the opportunity to gain professional experience by working with WSIU Public Broadcasting. Post-production facilities include a full complement of editing and multimedia software, allowing student producers to bring their imaginations to life.

Required Courses:

RTD 341 (3 hours) – Television in the USA

RTD 365A (3 hours) – Single Camera Field Production

RTD 365B (3 hours) – Multi-Camera Production

RTD 4____ (3 hours) – (approved 400 level)

Plus nine hours of Radio, Television, & Digital Media Electives

Three-Year Curriculum Plan

The Department of Radio, Television, and Digital Media offers a three-year graduation plan option for students entering the program as freshmen. Students who attempt to pursue this plan will successfully complete 40 credit hours per academic year. For more information, please contact the Radio, Television, and Digital Media academic advisor.

Television Studies Minor

A total of 15 credits is required for the minor. The student must complete RTD 200: Understanding Media. The student must also complete at least nine credit hours in 300 or 400-level Radio, Television, & Digital Media courses in the areas of media studies and media industries, as well as one 300 or 400-level production course to obtain a minor. All courses for a minor in Television Studies must be completed with a grade of C or higher.

Radio, Television, & Digital Media Courses

RTD200 - Understanding Media 200-3 Understanding Media. [IAI Course: MC 914] Basic overview of electronic media, history, current issues and future trends, programming content, technological and regulatory matters, media ethics, social effects and business practices. Critical viewing or listening and analysis of aesthetic techniques, formats, genres and content.

RTD201 - Intro to Media Production 201-3 Introduction to Media Production. [IAI Course: MC 916] Introduction to the functions, theories, materials, and techniques of writing and production of audio, video, and TV. Students write, perform, and produce audio and video projects both in and out of the studio. Restricted to RTD majors. Lab fee: \$60.

RTD305 - Understanding Audiences 305-3 Understanding Audiences. Students learn the importance of understanding the habits and preferences of their audience and develop an understanding and an appreciation of the business aspects of the media. Lab fee: \$45.

RTD308 - Media Law, Policy, Regulation 308-3 Media Law, Policy and Regulation. Students learn the historical foundations, legal principles, regulatory framework, and current policy issues within the rapidly changing electronic media industry. Prerequisite: C or better in RTD 200.

RTD310 - Electronic News Writing 310-3 News Writing for Electronic Media. [IAI Course: MC 917] Designed to cover selecting, writing and editing news material for presentation on radio, television and online. Lab hours required. Prerequisite: C or better in RTD 200 and RTD 201 or consent of the department. Lab fee: \$45.

RTD311 - Audio Journalism Electronic Media 311-3 Audio Journalism for Electronic Media. The techniques of gathering, producing and presenting news for radio and other aural media. Skills in research, interviewing, news judgment, ethics, and audio recording are explored. New distribution channels are examined. Lab hours required. Prerequisite: C or better in RTD 310 or consent of instructor. Lab fee: \$45.

RTD312 - Electronic Sports Journalism 312-3 Electronic Sports Journalism. Explores the foundations of electronic sports reporting, including legal and ethical considerations. Emphasis on responsible reporting practices while on deadline and enterprise reporting. Prerequisite: RTD 310.

RTD321 - Sports, Media & Society 321-3 Sports, Media and Society. Examines the roles sports play in contemporary society, as well as the ways in which media are used to present, and analyze, these roles. Issues of socialization, race, class, gender, sexuality, business and power as they relate to sport competition and to presentation in the media. Prerequisite: C or better in RTD 200 or equivalent.

RTD325 - The Media You Use 325-3 The Media You Use. Students examine business practices of the various media and entertainment industries, including radio, television, satellite, cable, movies, publishing, music, gaming, sports, and all forms of online, mobile, and emerging media.

RTD326 - Entertainment Corporation 326-3,3 The Entertainment Corporation. This class focuses on the entertainment corporation in terms of its internal structure, external relationships, industrial operations, and media output. A different corporation may be selected as a case study for any particular semester.

RTD327 - Media as a Business 327-3 Media as a Business. Students learn about the business practices of the media and how they operate within a global economy. Topic areas may include current trends, future issues, program content, distribution platforms, regulation, audience assessment, and emerging media technologies.

RTD331 - Digital Graphics 331-3 Digital Graphics Foundations. Course covers skills essential to digital image creation and workflow management for all stages of video production by integrating aesthetics, design and visual literacy. Students build an understanding of graphic computing processes by creating still images with and for different applications, and move on to creating animations, titles and simple post-production effects. Projects advance creativity, critical thinking and design skills. Lab fee: \$55.

RTD340 - Television Studies 340-3 Television Studies. Exploring television institutions, programs, audiences and how they interact with our lives. Restricted to junior or senior standing, or consent of the instructor.

RTD341 - TV in the US 341-3 Television in the United States. This course is designed to develop an appreciation of US television by examining various factors (political, cultural, technological, among others) that have influenced both the content and context of American television.

RTD351 - Program Content & Distribution 351-3 Program Content and Distribution. Students learn the social and economic purposes and methods of obtaining, developing, launching, scheduling, and evaluating programming content for public and commercial electronic media. Lab fee: \$45.

RTD357 - Promoting the Media 357-3 Promoting the Media. Facing unprecedented competition, the media are turning to marketing and promotion events to help win the hearts and minds of audiences and advertisers. Promotion has become a serious business and the industry is looking for professionals who can be both analytical and creative.

RTD360 - Electronic Media Performance 360-3 Electronic Media Performance. [IAI Course: MC 918] The development of disciplines controlling vocal and visual mechanics and interpretative performances for announcers, newscasters, interviewers and narrators of various radio and television situations. Laboratory hours required. Prerequisite: C or better in RTD 310 or RTD 383 or concurrent enrollment or consent of instructor. Lab fee: \$45.

RTD361 - Sound Mix in Popular Culture 361-3 Sound Mix in Popular Culture. A theoretical and design approach to sound in a digital environment within the context of popular culture. Projects include mash-ups, digital storytelling, soundscapes in virtual environments, live mixes, and sound in image. Readings and creative practice using digital technologies. Lab fee: \$55.

RTD362I - Sound Art and Practice 362I-3 Sound Art and Practice. (University Core Curriculum) This course will provide students with a philosophical understanding of the concepts and practices used in sound art and practice today and historically; and, in a variety of careers and in society in general. This course will introduce students to audio technology and terminology as well as expose them to the many applications of sound, as art and function, in society, regardless of their desire to pursue sound as a career. Lab fee: \$55.

RTD363 - Radio & Audio Production 363-3 Radio and Audio Production. Planning and production for radio. Study of different formats (documentary, drama, commercials, promotional announcements): Short form production in labs. Introduction to multitrack recording and editing. Examination of audio-production techniques in related fields. Prerequisite: C or better in RTD 200 and RTD 201. Lab fee: \$55.

RTD365A - Single Camera Field Prod 365A-3 Single Camera Field Production. Hands on practical instruction in a single camera field production. Through a series of individual and group exercises and assignments, students write, direct, light, shoot and edit original videos in a range of styles including documentary, narrative, promotional and experimental. The class covers pre-production and work-flow, introducing participants to professional industry practice. Prerequisite: C or better in RTD 200 and RTD 201. Lab fee: \$55.

RTD365B - Multi-Camera Production 365B-3 Multi-Camera Production. Designed to advance understanding of television production principles, student producers create work grounded in traditional and professional practices while learning the basic tools of television production. Focus is upon multi-camera studio production. Prerequisites: C or better in RTD 200 and RTD 201. Lab fee: \$55.

RTD369 - TV Directing 369-3 Directing for Television. Practical experience in the art of directing various genres associated with television, and the applied study of directing theory and visual storytelling. Lab exercises can include multi-camera and single camera formats, as well as work with actors. Prerequisite: C or better in RTD 365A, or permission of instructor. Lab fee: \$55.

RTD370 - TV News Reporting 370-3 Television News Reporting. Reporting, writing, editing and producing television news. Students simulate the disciplines of daily television news gathering. Prerequisite: C or better in RTD 310 or consent of instructor. Lab fee: \$55.

RTD373 - Music Business Overview 373-3 Music Business Overview. (Same as MUS 373) A survey of the music business, examining the challenges facing the industry such as piracy, new media, and corporate consolidation. Explore how these issues affect what is produced and broadcast, the impact on the consumer, and emerging legal issues. Careers in the industry will be examined, with discussion of where the industry is headed, and what new business models are being forged. One class trip to Nashville will be included during the course. Lab fee: \$55.

RTD374 - Entertainment Industry Nashville 374-3 The Entertainment Industry: Nashville. (Same as MUS 377) Examines the multi-dimensional entertainment industry in Nashville, including record labels, television, commercials, video, film, artist management, publishing, PROs, and radio. Five trips to Nashville with presentations from top industry professionals. Visits to recording studios and television networks. Explores career paths and necessary qualifications for success. Prerequisite: C or better in RTD 200 and RTD 201. Restricted to RTD Majors. Lab fee: \$175.

RTD375 - Intro to Audio Engineering 375-3 Introduction to Audio Engineering. (Same as MUS 375) Introduces basic principles of sound and how audio can be captured and manipulated utilizing current recording technology. The course incorporates concepts of signal flow, microphone selection and placement, signal processing and mixing. The objective is for the student to render a multi-track recording, from concept to completion, employing all the above concepts to demonstrate a solid knowledge of recording fundamentals. Restricted to Radio/TV and Digital Media majors. Lab Fee: \$55.

RTD376 - Adv Audio Engineering 376-3 Advanced Audio Engineering. (Same as MUS 376) This course further develops the skills introduced in RTD 375. Advanced methods will be practiced, including use of signal processing, routing, mixing and mastering. The objective is to have command of a larger format in-line console, and record/mix a multi-track session in Pro Tools, utilizing various microphone techniques, plug-ins, aux sends/returns, patchbay and automation. Prerequisite: C or better in RTD 375 or permission of instructor. Lab fee: \$55.

RTD377 - Selling Media 377-3 Selling Media. Students learn the techniques, strategies, and means of selling the many products and services of the media industries, including programming content, show concepts, and advertising. Lab fee: \$45.

RTD378 - Writing for Game Production 378-3 Writing for Game Production. This course teaches the understanding and performance of the variety of writing skills involved in the creation and development of digital media. Good writing skills are essential to the pursuit of all interactive media and well-written project documents greatly aid in the success of a digital media project. The skills learned will be useful in pursuing a career in many new media industries, including the game industry.

RTD379 - Sports Venue Production 379-3 Sports Venue Production. The course is designed to give practical, hands-on experience in multiple television technical and production positions during actual sporting events. Students will advance this working knowledge while producing in-game entertainment for video scoreboards and live multi-camera ESPN-3 telecasts of on-campus sporting events. Classroom instruction will also include the various elements that make up a professional telecast. Prerequisite: RTD 201 with a grade of C or better. Restricted to sophomore standing or above, or consent of instructor.

RTD382 - 2D Digit Character Animation I 382-3 2D Digital Character Animation I. The course instills an understanding and fluency in practical principles and techniques of 2D digital animation, with emphasis on character design and animation. Students learn 2D animation techniques and create two-dimensional animations for broadcast, web and interactive environments. In addition, students are exposed to other topics including story-telling and storyboarding, animatics, vector vs bitmap image processing, using major file formats. Special approval needed from the instructor.

RTD383 - Writing for Media Arts 383-3 Writing for Media Arts. Introduction to creative writing for media, including radio, television, Internet, and other emerging media applications. Includes analysis of format, narrative structure and story in produced scripts and aired programs. Prerequisite: C or better in RTD 200 and RTD 201 or consent of instructor. Lab fee: \$45.

RTD384 - Campus Media Practicum 384-3 (1,1,1) Campus Media Practicum. Practical experience in media operations on the campus. Instructor makes determination on student duties, based on needs of the Broadcast Service or the department and the desires of the student. A minimum of four hours per

week. Students obtain an application form from academic adviser. Mandatory Pass/Fail. Special approval needed from the instructor.

RTD385 - Newsroom Leadership Practicum 385-1 to 3 Newsroom Leadership Practicum. Practical experience in newsroom leadership on the campus. Instructor makes determination on student duties, based on needs of the WSIU-TV, WSIU-FM, or the department and the desires of the student. Students work under direct supervision of newsroom professional staff. Mandatory Pass/Fail. Prerequisite: C or better in RTD 310. Special approval needed from the instructor.

RTD389 - Electronic Media Workshop 389-2 to 9 Electronic Media Workshop. Specialized work in various areas electronic media. Topics will vary. Special approval needed from the instructor. Lab fee: \$55.

RTD391 - RTD Independent Study 391-2 Independent Study. Area of study to be determined by student in consultation with Radio, Television and Digital Media faculty. No more than two students may work on the same project. Special approval needed from the instructor.

RTD392 - Media Studies Workshop 392-3 Electronic Media Studies Workshop. Specialized work in various areas of Media Studies. Topics will vary but could include Reality Television, Gender and the Media. Prerequisite: RTD 200 with a grade of C or better.

RTD395 - Internships 395-1 to 6 Internship Program. News, production, performance and/or marketing/management work experience with a non-university professional organization. The student will undertake a work experience beyond that available at the university. No retroactive credit for previous work experience. May be repeated up to six credits. Student may earn no more than 9 internship hours from RTD 395 and 396. Prerequisite: GPA of 2.50 or better. Restricted to junior standing. Pass/Fail.

RTD396 - Hollywood Internships 396-1-6 Hollywood Studies/Internship. Supervised work and study experience in Los Angeles, California, in areas of production, program development, casting, distribution, etc. Students work closely with Hollywood professionals and attend seminars on various facets of the industry. Summer session only. Students may earn no more than 9 internship hours from RTD 395 and 396. Prerequisite: GPA of 2.50 or better. Restricted to junior standing. Pass/Fail.

RTD403 - TV Lighting 403-3 Lighting for Television. Covers typical lighting situations encountered in the field of television. Practical exercises are used extensively. Prerequisite: C or better in RTD 365A or concurrent enrollment. Restricted to RTD majors. Lab fee: \$55.

RTD405 - Media Economics 405-3 Media Economics. Focus on economic and financial forces affecting the media industries. Study of the economic practices and impacts of corporate mergers and synergies, global integration of media firms, multi-stream revenue generation, barriers to entry and regulatory constraints. Prerequisite: C or better in RTD 200. Special approval needed from the instructor.

RTD450 - TV Documentary Production 450-3 Television Documentary Production and Technique. An overview of the development of various types, styles, and schools of major documentary production including analysis of American and International documentaries. Students will also research, write, and produce several short-form documentaries. Prerequisite: C or better in RTD 365A or consent of instructor. Restricted to RTD majors and senior standing. Lab fee: \$55.

RTD455 - Oral History and Media 455-3 Oral History, Storytelling, and Media. (Same as HIST 498) This course will develop an appreciation of the field of oral history, methodological concerns and applications. Students will learn about the oral history process, including interview preparation and research, interview technique, the nature and character of evidence, transcribing, and legal and ethical concerns. Restricted to junior or senior standing.

RTD457 - Media Marketing 457-3 Media Marketing. The core issues of marketing media products in a variety of contexts, such as launching a television program or series, opening a film, introducing an Internet website or application. Attention to branding and media planning, including developing an online marketing strategy. Prerequisite: C or better in RTD 200. Special approval needed from the instructor. Lab fee: \$45.

RTD461 - VFX Post 461-3 Visual Effects in Post. This course teaches the understanding and creation of contemporary visual effects work. We will cover both the science and art of visual effects covering

motion graphic design principles (including typography), traditional techniques (storyboarding, mattes, masks, adjustment layers), chromakey compositing, 2D graphic animation, and CGI motion matching for 2D and 3D shots. Production workflows and client management will also be covered. The skills learned will be useful in pursuing a career in many media industries, including television, cinema, and games. Prerequisite: RTD 201 with a grade of C or better. Restricted to junior and senior level. Special approval needed from the instructor. Lab fee: \$50.

RTD463 - Sound Art Practice II 463-3 Sound Art and Practice II. This course allows students to explore sound as an art form. During the semester, students create original sound works and learn hands on approaches to technology, which include building low cost microphones. Experimental sound synthesis and original approaches to creative sound will be explored as well as methods of collaboration and exhibition. Special approval needed from the instructor. Lab fee: \$55.

RTD464 - Audio Documentary & Diversity 464-3 Audio Documentary and Diversity. (Same as WGSS 464) This course is the creation of short and long form audio documentaries by students, regardless of production background. Introduces students to basic production techniques and diversity considerations during the making of a documentary. This course uses qualitative methods to investigate an issue or to document an event, with an emphasis on observation and interview techniques. Topics will explore the role of gender, race, ethnicity and class during the planning, gathering and production stages of the documentary. Open to non-majors. Lab fee: \$55.

RTD465 - Advanced TV Production 465-3 Advanced Television Production. Instruction and practical experience in the development of programming for television. Students will produce individual and/or small group projects for broadcast and follow the projects through from concept to completion. Prerequisite: C or better in RTD 365A or consent of instructor. Restricted to RTD majors and senior standing. Lab fee: \$55.

RTD466 - Motion Graphics 466-3 Motion Graphics. Students build skills in visualization and design for motion graphics through a series of practical projects that include the creation of animated graphic packages, titles, sequences and short animations. Course guides the students in honing messages for visual works and covers best practices for working with clients and workflows for motion graphics production. Recommended: RTD 331 or equivalent graphics experience. Lab fee: \$50.

RTD467 - Global Media 467-3 Global Media. Global media history, main theories, and current developments. The significance of global trends for local and regional media and cultures. Prerequisite: C or better in RTD 200. Restricted to junior or senior standing or consent of instructor.

RTD469 - Video for Non-Majors 469-3 Video for Non-Majors. Basic shooting and editing to students interested in using video for purposes other than professional television production, such as education, business, or Web page development. The course surveys video formats and applications. Students produce projects using editing and special effects. Credit not given to RTD majors. Special approval needed from the instructor. Lab fee: \$55.

RTD470 - TV News Field Production 470-3 Television News Field Production. Advanced field reporting for television. Students will work under the supervision of the instructor to develop, investigate and report news stories for television. This process will also study the development and production of the mini-documentary. Class will utilize professional grade video recorders, cameras and editing systems. Prerequisite: C or better in RTD 370 or consent. Lab fee: \$55.

RTD473 - Media Management 473-3 Media Management. This course provides students with an understanding of how media firms operate within a complex social, political, and multicultural environment, and examines the breadth of the decision making processes involved. Management and leadership of media organizations require dealing with unique challenges and complex problems associated with a creative-oriented and highly visible industry. Restricted to junior standing. Lab fee: \$55.

RTD475 - MIDI Production 475-3 MIDI Production Studio. Comprehensive study of sequencing techniques, editing, sampling and hardware and software based instruments will be applied with hands-on exercises and projects. Skills developed in this course will enable students to creatively utilize the most current MIDI technology for use in writing, arranging, recording and manipulating music and audio for

albums, jingles and film/television. Prerequisite: C or better in RTD 375 or consent of instructor. Lab fee: \$55.

RTD476 - Creative Audio Producing 476-3 Creative Audio Producing. This course puts the student in the role of recording producer, including responsibility for all decision-making during project development and production. Includes selection of material, budgeting, contracts, scheduling, performances, and all aspects of recording. Emphasis is placed on communication with clients, artists and engineers. Related elements include publishing, copyright and contracts. Prerequisite: MUS 375 or RTD 375, or consent of instructor. Lab fee: \$55.

RTD477 - Investigative Reporting 477-3 Investigative Reporting for TV, Radio, and Online. Each student will choose one topic and produce a story with multimedia elements. Students will do in-depth research, conduct interviews, and investigate issues and topics of their choice with approval of the instructor. The latest investigative techniques will be explored as well as legal and ethical issues. Stories can air on public television, radio, or online. Prerequisite: C or better in RTD 201. Lab fee: \$55.

RTD478 - Game Narratives 478-3 Game Narratives. Teaches students the core ideas and practices of game narratives. It covers: a) The conceptual fundamentals of theories of game narrative design; b) The technical and organizational process of creating a narrative game. This includes designing and implementing a narrative game using an appropriate software tool. While game narrative is at the center of this course, the skills and knowledge acquired in this class are applicable to broad range of design-centric fields and contexts. Restricted to junior and senior level. Special approval needed from the instructor.

RTD479 - Multi-Camera Field Prod 479-3 Multi-Camera Field Production. Concentration on the techniques, conventions and implementation of live-event, multi-camera production in the field, including concerts, awards shows, and sports. Prerequisite: C or better in RTD 365A and RTD 365B or consent of instructor. Lab Fee: \$55.

RTD480 - Emerging Media 480-3 Emerging Media. Examination of developments in emerging media, including Internet applications, mobile media, and gaming, among others. Exploration of the impact of emerging media on traditional media cultures and economies. Restricted to senior standing or consent of instructor.

RTD483 - TV Pilot Writing 483-3 Script to Screen I: Writing the TV Pilot. Script to Screen I concentrates on scriptwriting for serial fictional television-situation comedies and dramas. Students analyze structure, form, style and content of TV shows and scripts and will write the "bible" for an original series as well as the pilot episode for that series. In sequence with RTD 484, some scripts from this class will be produced in RTD 484. Prerequisite: C or better in RTD 365A or consent of instructor. Lab fee: \$45.

RTD484 - TV Pilot Production 484-3 Script to Screen II: TV Pilot Production. Students work on production teams to create a pilot for a sitcom or dramatic television program, from original scripts written by students in RTD 483. Topics covered include casting, budgeting, scheduling, script analysis, location management, production design, staging, lighting, directing and acting for the camera. In sequence with RTD 483. Prerequisite: RTD 365A with a C or better, or consent of instructor. Restricted to senior standing. Lab fee: \$55.

RTD485 - Post-Production 485-3 Editing and Post-Production Workshop. Combining editing theory and practice with study and critique of professional programs, the course has students creating practical editing exercises and examining all aspects of the post-production process. Prerequisite: C or better in RTD 365A or consent of instructor. Lab fee: \$55.

RTD487 - 3D Animation I: Modeling 487-3 3D Animation I: Modeling. In this course, students will gain a solid foundation in creating 3D computer graphics using industry standard computer software and hardware. Through analysis and practice, students will develop an understanding of the principles of 3D modeling, lighting, texturing and rendering. Conceptual design and professional practices will also be addressed. Skills learned in this course will prepare students for the 3D Animation II class. Lab fee: \$55.

RTD488 - 3D Animation II: Anim/Visl EFX 488-3 3D Animation II: Animation & Visual EFX. This intermediate course builds upon the skills learned in the 3D Animation I course, and will focus on narrative development, motion design and visual effects generation using industry standard practices.

Topics include key frame animation, inverse kinematics, and visual effects using dynamics. A term project utilizes the creative and technical skills explored in class. Prerequisite: C or better in RTD 487 (3D Animation I). Lab fee: \$55.

RTD489 - Electronic Media Workshop 489-2 to 9 Electronic Media Workshop. Advanced work in various areas of electronic media, such as Gender and Media, Children and Media, Blaxploitation, Television in the US. Special approval needed from the instructor. Lab fee: \$55.

RTD490 - 3D Animation III: Studio 490-3 3D Animation III: Production Studio. This advanced course builds upon the skills mastered in the 3D Animation I and II courses. Students walk through the 3D animation production cycle to produce a high-quality 3D animation suitable for portfolio exhibition. Class critiques and project analyses are used to direct students through the production process. This course advances students' knowledge of industry-standard practices. Prerequisites: C or better in RTD 487, or RTD 488, or MCMA 497. Lab fee: \$55.

RTD491 - Independent Study 491-3 Independent Study. Area of study to be determined by student in consultation with graduate faculty. No more than two students may work on same project. Students must complete an application form which is available from the departmental adviser. Not for graduate credit. Restricted to senior standing. Special approval needed from the instructor. Lab fee: \$45.

RTD492 - Adv Media Studies Workshop 492-3 Advanced Electronic Media Studies Workshop. Advanced topics in Media Studies such as Children and Media, Gender and Media, Race and Media. Restricted to Junior and Senior standing or consent of instructor.

RTD493 - Media in Society 493-3 Media in Society. The capstone course explores the interrelation of media with social patterns, as well as economic and political systems, and how media affect society and societal norms in the US and globally. Media theories are also covered. Required for major. Prerequisite: RTD 200 and RTD 201 with a C or better. Restricted to senior standing.

RTD496 - Sound and Moving Image 496-3 Sound and Moving Image. This course examines in detail the relationship of sound and moving images. It traces intertwined histories, revealing important collaborations and technological developments that set precedents for both film and video. While the primary focus of this course is the artistic creation of soundtracks, we will also explore musical scoring and orchestration as utilized by film and television composers. Students will learn about and create sound designs, Foley sound and mix to picture sessions. Special approval needed from the instructor. Lab Fee: \$55.

RTD497 - African Americans & Film 497-3 History of African American Images in Film. This course is an historical and critical exploration of the diverse images of African-Americans in cinema which examines the roles that racism and power play in the construction of black film representations as well as in modes of film production and marketing. The course emphasizes critical viewing of films to determine the impact that African American filmic representations have on contemporary society. Restricted to junior standing or approval of the instructor.

Radio, Television, & Digital Media Faculty

Brooten, Lisa, Associate Professor, Ph.D., Ohio University, 2003.

Burns, David, Associate Professor, M.F.A., Parsons School of Design, 2001.

Downing, John D. H., Professor, Emeritus, Ph.D., London School of Economics and Political Science, 1974.

Gher, Leo, Associate Professor, Emeritus, M.S., Southern Illinois University, 1980.

Galloway, R. Dennis, Senior Lecturer.

Helleny, Edward J., Senior Lecturer, M.S.Ed., Southern Illinois University Carbondale, 2004.

Hochheimer, John L., Professor, Emeritus, Ph.D., Stanford University, 1986.

Johnson, Jenny, Lecturer, M.F.A., Southern Illinois University, 2017.

Johnson, Phylis, Professor, Emerita, Ph.D., Southern Illinois University Carbondale, 2003.

Keller, Kenneth R., Associate Professor, Emeritus, M.T.V., University of Illinois, 1966.

Kreider, Wago, Associate Professor, M.F.A., Rutgers University, 2002.

Lawrence, William Novotny, Associate Professor, Ph.D., University of Kansas, 2004.

Lemish, Dafna, Professor, Emerita, Ph.D., Ohio State University, 1982.
Lewison, Sarah, Associate Professor, M.F.A., University of California, San Diego, 2001.
Meehan, Eileen R., Professor, Emerita, Ph.D., University of Illinois, 1983.
Motyl, Howard D., Associate Professor and Interim Chair, M.F.A., Northwestern University, 1990.
Needham, Jay, Professor, M.F.A., California Institute of the Arts, 1989.
Padovani, Cinzia, Associate Professor, Ph.D., University of Colorado at Boulder, 1999.
Perkins-Buzo, John Reid, Assistant Professor, M.F.A., Northwestern University, 2004.
Podber, Jacob J., Associate Professor, Ph.D., Ohio University, 2001.
Strong, Richard, Lecturer, M.S., University of Colorado, Denver 2015.
Thompson, Janice, Professor, M.G.S., Roosevelt University, 1988.
Wall, James, Senior Lecturer, M.A., Southern Illinois University Carbondale, 2004.

Sociology

Sociology is the science of society. It explains how human groups, institutions, and social movements shape our lives. Sociology develops students' insights into theoretical and practical aspects of life. Sociology students study such topics as deviance, sex and gender roles, social movements, social problems, large-scale business and government organizations, international development, and social change.

Training in sociology is basic both to creative living and to such practical tasks as the development and effective working of businesses, families, community service agencies, political movements and parties, churches, social clubs, government, industry, and schools.

Those with degrees in sociology find meaningful and rewarding employment as consultants to business and government, social change agents (e.g., community organizers), politicians, educators, and diplomats. Like other liberal arts students, sociology majors also enter the business world, particularly in the sales or personnel divisions of major corporations.

An undergraduate major in sociology is excellent preparation for those anticipating graduate study in law, social welfare, business administration, journalism, and many of the technical and scientific fields. In addition, many students have enjoyed the benefits of major-minor combinations between sociology and these other related fields.

The Sociology Major. The major is for students seeking a broad academic background in sociology. Those who want a general liberal arts education in the social sciences or those anticipating graduate study in one of the social sciences usually choose it.

Academic Advisement. A student planning to major or minor in sociology should consult the College of Liberal Arts advising office as early as possible. Subsequently the student will visit a college advisor each semester until all major requirements have been completed.

To graduate with a major in sociology the student must meet all the University Core Curriculum requirements and the requirements of the College of Liberal Arts. The major requires thirty-six hours of course work. Four courses are required: SOC 108, SOC 301, SOC 308 and SOC 312. A capstone course during the senior year, SOC 497 or SOC 498, which requires prior consent of instructor, is also required. Each student must also take two additional 400-level courses in sociology. These requirements are summarized below.

Transfer Students. Credits for some sociology courses taken at community colleges are transferable. Students should have their sociology credits evaluated by the department's director of undergraduate studies at the earliest opportunity. At least 20 hours of sociology credit must be earned at Southern Illinois University Carbondale. The two 400-level courses must be taken at a senior level institution and SOC 497 or SOC 498 must be taken at Southern Illinois University Carbondale.

Bachelor of Arts Degree in Sociology, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
College of Liberal Arts Academic Requirements	11
Requirements for Major in Sociology	36
1) Sociology Requirements: SOC 108, SOC 301, SOC 308 and SOC 312	14
2) Senior Year Work: SOC 497 (or SOC 498)	4
3) At least two additional sociology 400-level courses	6
4) Sociology course electives	12
Electives	34
Total	120

No more than nine hours of Sociology Core Curriculum courses, including SOC 108, can count toward both the University Core Curriculum requirements and the Sociology major.

Sociology Minor

A minor in sociology consists of a minimum of 15 hours, including SOC 108 and at least three more 300- or 400-level sociology courses at SIU Carbondale. An average GPA of 2.0 or higher must be achieved in sociology courses. No more than six hours of Sociology Core Curriculum courses, including Sociology 108, may count toward both the University Core Curriculum requirements and the sociology minor.

Honors Program in Sociology

The department offers an honors program for academically outstanding sociology majors. Qualifications for acceptance into this program are: (1) an overall grade point average of at least 3.00; and (2) completion of 8 hours in sociology courses with a grade point average of at least 3.25 in all sociology courses taken at Southern Illinois University Carbondale, and the completion of no fewer than six, nor more than fourteen, semester hours in research or independent study which are counted toward the major. Successful completion of the department's honors program is noted on the academic record at the time the degree is recorded and on the diploma, i.e., Departmental Honors in Sociology. For details, qualified students interested in this program should consult the department's director of undergraduate studies. Concurrent participation in the University Honors Program is encouraged.

Sociology Courses

SOC108 - Intro to Sociology 108-3 Introduction to Sociology. (University Core Curriculum) [IAI Course: S7 900] An introduction to the sociological perspective on human behavior, the structure and processes

involved in social relationships, social stratification and inequality, social institutions, and social change. A survey of major areas of interest in sociology. Required of majors and minors in Sociology.

SOC215 - Race & Ethnic Relations in US 215-3 Race and Ethnic Relations in the United States. (University Core Curriculum) [IAI Course: S7 903D] Current theory, research and events in race-ethnic relations in the United States, including the intersection of class, gender and sexuality. Topics include the European colonization of North America, dynamics of immigration, identity formation among ethno-racial groups and political economy of racism.

SOC223 - Women/Men in Contemp Society 223-3 Women and Men in Contemporary Society. (University Core Curriculum) (Same as WGSS 223) [IAI Course: S7 904D] Examines theories of women's and men's roles in society. Surveys contemporary gender inequalities in the U.S. and developing countries. Special attention given to employment, race, sexual assault, feminist movements, alternative family/lifestyles and childrearing.

SOC298 - Multicultural Applied Expernce 298-1 Multicultural Applied Experience. (Multicultural Applied Experience Course) An applied experience, service-oriented credit in American diversity involving a group different from the student's own. Difference can be manifested by age, gender, ethnicity, nationality, political affiliation, race, or class. Students can sign up for the one-credit experience in the same semester they fulfill the multicultural requirement for the University Core Curriculum or coordinate the credit with a particular core course on American diversity, although neither is required. Students should consult the department for course specifications regarding grading, work requirements and supervision. Graded Pass/Fail only.

SOC301 - Theory and Society 301-3 Theory and Society. Sociological theories explain concrete social phenomena by modeling them abstractly. This course exposes students to exemplary theories, either classical or contemporary, and analyzes the general strategies sociologists used to develop them. Required of majors in sociology.

SOC302 - Contemporary Social Problems 302-3 Contemporary Social Problems. Examines how social phenomena come to be defined as social problems and the outcomes of these processes for specific cases. How is it that a social phenomenon comes to be seen as a social issue? Analysis of selected social problems and critical assessment of claims-making about these problems.

SOC303 - Sociology of Deviance 303-3 Sociology of Deviance. Review of sociological perspectives used in the study of deviance and deviants. Does deviance have functions in society? How is it that a group of individuals comes to be defined as deviant? Examines societal reactions to deviance and consequences for people defined as deviant. Analysis of selected forms of deviance, such as mental illness, "punk" subcultures, eating disorders, drug and alcohol abuse and sex workers.

SOC304I - Global Perspectives on Family 304I-3 Global Perspectives on the Family. (University Core Curriculum) People around the world experience family life under different circumstances and from different perspectives. This course will focus on these differences and how societies have evolved to meet the needs of family units within their different social settings. Other key topics that affect families around the world will be discussed: global economy and families, gender inequality, familial violence, and environment concerns.

SOC306I - Popular Culture in Society 306I-3 Popular Culture in Society. (University Core Curriculum) Examines the social organization of popular culture, treating popular culture objects as products that are created, manufactured, distributed and consumed. The focus is on the people, activities, organizations and institutions that are involved in popular culture.

SOC307 - Global Perspctvs Sex Diversity 307-3 Global Perspectives on Sexual Diversity. (Same as WGSS 315) This course explores sexual diversity within different hegemonic heterosexual cultures, worldwide. Using insight from historical and sociological analysis, the contemporary development of social movements for lesbians, gays, and bisexuals and their oppositional forces is analyzed, and consequent cultural changes that have resulted from the confrontation of these forces are examined.

SOC308 - Statistics for Soc Science 308-4 Statistics for Social Science. Methods and application of statistics in the social sciences. Measures to describe distribution, measures of relationship, statistical inference.

SOC310 - Technology and Society 310-3 Science, Technology and Society. This course introduces students to a variety of research traditions and debates within the field of science, technology, and society. We will explore the ways in which historical and contemporary patterns of human evolution have created technological problems; why we are dependent and vulnerable to technology; and how access to science and technology and the effects of science and technology have an unequal impact. In addressing these topics, the course will make linkages among local, national, and global processes. We will focus on a variety of areas including: technology and environmental issues, science, technology, and gender, and the effects of technological change on our daily lives.

SOC312 - Elements Sociological Research 312-4 Elements of Sociological Research. The student is introduced to a variety of research methods in the social sciences including use of the library, techniques of observation, and elementary steps in quantitative measurements and analysis. Satisfies the CoLA Writing-Across-the-Curriculum requirement.

SOC321 - Society & the Individual 321-3 Society and the Individual. Introduction to basic concepts in sociological and social psychology (microsociology). Examines how individuals create and shape the social world that simultaneously shapes and creates individuals. Emphasizes face-to-face interaction, socialization, social location and identity.

SOC322 - Community Organization 322-3 Community Organization. This course applies basic sociological concepts and perspectives to issues of community organization. The course is designed to provide insights into how communities meet (or why they fail to meet) residents' needs. Communities are arenas of social interaction where most important relationships are structured by the presence of informal groups and formal organizations. Informal groups provide the building blocks of any community and play important roles in setting the norms and standards of accepted social behavior. Formal organizations (businesses, schools, government agencies) control significant human and financial resources which give them influence and power to shape the direction of change within a community.

SOC340 - Family 340-3 Family. The family in historic and contemporary society; evolution of the modern family; changes in family functions, structure, roles; and an examination of variation and change in family systems.

SOC350 - Sociology of Leisure 350-3 Sociology of Leisure. This course examines leisure, broadly defined, in a sociological context. What can we learn about ourselves, and about society, by examining leisure involvement? How do various social institutions influence leisure behavior, and how do individuals respond to those influences? Using leisure as an organizing principle, this course reinforces understanding of sociological concepts, theories, and methods.

SOC351 - Sociology of Religion 351-3 Sociology of Religion. Examines the dynamics of religious institutions in society, and of religious beliefs and attachments among individuals, including the connections between religion and family, health, education, and politics.

SOC352 - Sociology of Music 352-3 Sociology of Music. This course analyzes music as a social phenomenon with special attention to race, class, gender, ethnicity, technology and social change. We look at how musicians and their music influence society, and vice versa, using macro and micro sociological perspectives, embedded within various historical and cultural themes.

SOC371 - Population Problems 371-3 Population Problems. Characteristics and problems of population growth, composition, distribution, mortality, birth control and fertility, international and internal migration, and government policies.

SOC372 - Criminology 372-3 Criminology. An examination of the socially constructed nature of crime, and historical and contemporary theories of criminality. Additional topics of interest include types of offenses, methods of studying crime, and the correlates of crime.

SOC386 - Environmental Sociology 386-3 Environmental Sociology. Focus on social structural conditions and institutions that have changed the natural environment as a social problem. Responses

to these problems will be addressed on the individual, group (race, class and gender) and institutional levels.

SOC396 - Readings in Sociology 396-1 to 6 Readings in Sociology. Instructor and student select reading topics which are not covered in depth in regular course offerings. Special approval needed from the department and instructor.

SOC397 - Special Topics in Sociology 397-3 to 12 Special Topics in Sociology. Varying sociological topics selected by the instructor for study in depth and breadth. Topics will be announced in advance of registration for the course. May be repeated 4 times.

SOC399 - Internship in Sociology 399-2 to 8 Internship in Sociology. Designed to provide students majoring in sociology the opportunity to engage in applied sociology and gain valuable work experience. Classroom meetings are required. Restricted to minimum of junior standing. Special approval needed from the instructor. No more than three hours of 399 to count toward the major.

SOC406 - Social Change 406-3 Social Change. Theories and problems of social change; their application, with emphasis on the modern industrial period.

SOC407 - Sociology of Sexuality 407-3 Sociology of Sexuality. Examines a range of social issues related to human sexuality and the interaction between sexuality and other social processes. Emphasis is on the relevant concepts, theories, and methods in the field of sexual studies, the social and historical construction of sexuality and the ways in which social characteristics shape sexual behaviors and desires, sexual variation, including its causes and consequences, how basic social institutions affect the rules governing sexuality, the major moral and political controversies that surround sexuality, and the "dark side" of sexual life.

SOC415 - Logic of the Social Sciences 415-3 Logic of the Social Sciences. (Same as PHIL 415) An examination of the theoretical structure and nature of the social sciences and their epistemological foundations. The relationship of social theory to social criticism; theory and praxis. Historical experience and social objectivity. Social theory as practical knowledge.

SOC423 - Sociology of Gender 423-3 Sociology of Gender. (Same as WGSS 442) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro level, in work and family roles, in social institutions, and at the global, cross-cultural level.

SOC424 - Social Movements 424-3 Social Movements and Collective Behavior. An analysis of social behavior in non-institutional settings such as crowds, disasters, riots, mass panics, crazes, cults, and social movements. Emphasis is on the cultural and structural factors leading to collective action and its impact on social change.

SOC435 - Social Inequality 435-3 Social Inequality. Discussion of theories and evidence pertaining to the socio-structural causes and consequences of inequality based on social class, prestige, power, gender, wealth and income.

SOC437 - Socio Globalztn & Developmnt 437-3 Sociology of Globalization and Development. Survey of sociological theories and research on globalization and development: modernization, dependency, world-system, and global economy. Problem areas include population growth and control, economic growth and underdevelopment, role of state, transnational corporations, financial institutions, and organizations, non-governmental organizations, work, population, migration, social movements and resistance, gender, race-ethnic, class, and sexuality issues.

SOC438 - Soc of Ethnic Relations 438-3 Sociology of Ethnic Relations in World Perspective. Examines theories, concepts and research on the structure of ethnic relations and ethnic problems in contemporary societies in major world regions. Assimilationist, pluralist, secessionist, and militant types of ethnic and racial group relations are covered in selected societies. Designed for students with advanced interest in comparative ethnic relations. Prerequisite: SOC 215 is recommended.

SOC455 - Racial Inequality 455-3 Racial Inequality. This course is an introductory survey on the sociology of Racial Inequality. As such, the basic objective of this course is to give students a broad understanding of race and inequality issues in society. This course will require students to become

familiar with the critical frameworks and concepts through which social scientists make sense of racial inequality; to come to terms with the ideological, political, and economic mechanisms that perpetuate racist structures; to study the past and present historical contexts within which racial inequality is given shape; and to explore potential venues for change.

SOC460 - Sociology of Medicine 460-3 Sociology of Medicine. Analyzes the social structures and issues involved in health, illness, and health-care delivery systems in the United States. Explores the economic and political influences on the role of medicine in society, as well as the organization of medical care and health institutions. Critically examines the social processes and factors that influence health and illness behavior.

SOC461 - Women, Crime and Justice 461-3 Women, Crime and Justice. (Same as CCJ 460 and WGSS 476) A study of women as offenders, as victims, and as workers in the criminal justice system.

SOC462 - Victims of Crime 462-3 Victims of Crime. (Same as CCJ 462) An examination of the extent and nature of victimization, theories about the causes of victimization, the effects of crime on victims and services available to deal with those effects, victims' experiences in the criminal justice system, the victims' rights movement, and alternative ways of defining and responding to victimization.

SOC465 - Sociology of Aging 465-3 Sociology of Aging. The adult life cycle from a sociological perspective, with emphasis on the later stages of adulthood. Special topics on aging include demographic aspects, family interaction, ethnicity, and cross-cultural trends.

SOC471 - Intro to Social Demography 471-3 Introduction to Social Demography. Survey of concepts, theories, and techniques of population analysis; contemporary trends and patterns in composition, growth, fertility, mortality, and migration. Emphasis is on relationship between population and social, economic, and political factors.

SOC473 - Juvenile Delinquency 473-3 Juvenile Delinquency. (Same as CCJ 473) An in-depth study of theories of delinquency, analytical skills useful in studying delinquent offenders, systematic assessment of efforts at prevention, and control and rehabilitation in light of theoretical perspectives. Six hours of social/behavioral science recommended.

SOC475 - Political Sociology 475-3 Political Sociology. (Same as POLS 419) An examination of the social bases of power and politics, including attention to global and societal political relations, as well as individual-level political beliefs and commitments; primary focus on American politics.

SOC476 - Religion and Politics 476-3 Religion and Politics. (Same as POLS 476) Examines the connection between religious beliefs and institutions and political beliefs and institutions. Comparative studies will focus on religious political movements in the United States and throughout the world.

SOC490 - Special Topics in Sociology 490-3 Special Topics in Sociology. Varying advanced sociological topics selected by the instructor for study in depth. May be repeated for a maximum of twelve semester hours provided registrations cover different topics. Topics announced in advance.

SOC497 - Senior Seminar 497-4 Senior Seminar. Contemporary issues in sociology and the analysis of these issues. Restricted to senior standing with 20 hours in sociology (including 301), or consent of instructor. Not for graduate credit. Satisfies the CoLA Writing-Across-the-Curriculum requirement.

SOC498 - Independent Research 498-1 to 8 Independent Research. Students who wish to pursue specific topics in depth, or who have developed specific research projects, may submit proposals to faculty members who can serve as mentors. Independent research normally results in a significant paper or research report that serves as a demonstration of scholarly competence and concludes the major. May substitute for 497 only when student demonstrates substantial preparation or need. Satisfies the CoLA Writing-Across-the-Curriculum requirement. Not for graduate credit. Restricted to senior standing with 20 hours in sociology (including 301). Special approval needed from the instructor.

SOC501 - Classic Sociology Theory 501-3 Classical Sociological Theory. A systematic survey of sociological theory with the focus on 19th and early 20th-century sociological thought. An in-depth examination of a selected number of thinkers whose work laid the foundation for major schools of

contemporary sociology. Students are expected to be familiar with the fundamentals of sociological analysis.

SOC502 - Contemporary Sociology Theory 502-3 Contemporary Sociological Theory. A survey of major 20th-century theoretical orientations in sociology with emphasis on their differing modes of conceptualization and alternative research programs. Students are expected to be familiar with the classics of sociological thought.

SOC506 - Sem-Contemp Soc Theory 506-3 Seminar on Contemporary Sociological Theory. Recent trends in sociological theory; current approaches to the construction and application of theoretical models and their relations to empirical research. Prerequisite: SOC 501 or consent of instructor.

SOC507 - Sociology of Sexuality 507-3 Seminar in the Sociology of Sexuality. (Same as WGSS 507) Examines the emerging body of work in the fast-growing field of sexuality studies. While the course focuses on sociological research, it takes a few side trips into other disciplines. We begin by discussing the evolution of theory and methodology in the sexual sciences. After briefly considering the contributions of early sexologists and the work of Sigmund Freud, we will survey the sociology of sexuality from its beginnings in quantitative research, through classical sociological theory, social constructionism, and feminism. We'll then examine Foucault's radical rethinking of sexuality and grapple with the challenges of queer theory. The second part of the course will take up several substantive areas in the sociology of sexuality, drawing on cutting edge quantitative and qualitative research.

SOC512 - Research Methods 512-4 Sociological Research Methods and Design. Focus on research process: identification of the role of theory, formulation of research questions, research design and quantitative, qualitative, and mixed method data collection techniques. Connections between theory, research design and measurement decisions, and interpretation (answering research questions) are emphasized throughout. Includes practical and ethical issues, e.g. informed consent.

SOC514 - Qualitative Methodology 514-4 Qualitative Methodology. Focus on research strategies involving the systematic exploration, documentation and analytic description of social settings, interactions, meanings, lifeworlds and texts. Includes discussion of field observation, depth interviewing, oral histories/narratives, case studies, biographies and life histories, focus group interviewing, content analysis of written and visual data, historical/archival investigations, among other approaches.

SOC518 - Teaching Sociology 518-3 Teaching Sociology. Emphasis is on the development of teaching skills and pedagogical knowledge for instructors in sociology.

SOC521 - Seminar: Social Psychology 521-3 Seminar in Social Psychology. In depth examination of specific theoretical systems or substantive problems in social psychology. Students wishing specific information on the topic of the seminar should consult with the instructor for more detail.

SOC526A - Statistical Data Analysis I 526A-4 Statistical Data Analysis in Sociology I. Provides a foundation in univariate and bivariate descriptive statistics, inferential statistics including hypothesis testing about population parameters and bivariate and multivariate relationships, and measures of association for nominal, ordinal, and interval-ratio variables, and an introduction to bivariate and multivariate correlation and linear regression (including concepts of causal modeling and control variables). Restricted to graduate standing.

SOC526B - Statistical Data Analysis II 526B-4 Statistical Data Analysis in Sociology II. Provides in-depth instruction in multiple regression including assumptions of linear model, diagnostics and corrections for violation, exploratory factor analysis, using categorical dependent variables (logistic and multi-nominal regression), nonlinear relationships, interactions, and extensions to advanced techniques as time allows. Prerequisite: SOC 526A (or successful pass of proficiency test).

SOC530 - Topical Seminar in Soc 530-2 to 12 (2 to 4 per topic) Topical Seminar in Sociology. Content varies with interests of instructor and students. Special approval needed from the instructor.

SOC533 - Sem-Soc Stratification 533-3 Seminar in Social Stratification. Comparative study of power, social class, and status; conceptions of social structure and measurement techniques; explanations of social and occupational mobility; institutions and differential life changes.

SOC534 - Sem Global & Soc Change 534-3 Seminar in Globalization and Social Change. Overview of prevailing theories, research, methods, and analysis in globalization and social change. These include socio-economic changes in capitalism and development, emergence of global social change agents: transnational corporations, financial institutions, and organizations, nongovernmental organizations; informalization of work, population, migration, social and revolutionary movements, gender, race-ethnic, class, and sexuality.

SOC539 - Sem-Complex Organizations 539-3 Seminar in Complex Organizations. Overview of theories, research, and prevailing issues of complex organizations. These will include the power structure of the business community, emergence and structure of the bureaucratic organization, bases of authority, systems of formal and informal relations, unanticipated consequences of organizational structure, labor relations, total institutions and social movements as organizations.

SOC542 - Seminar on the Family 542-3 Seminar on the Family. Overview of the theoretical approaches, substantive issues, and techniques of research and measurement in the study of American family life. Approaches include structural functionalism, conflict theory, and the feminist critique. Among the substantive topics are family roles and relationships, kinship, relationships of the family to other institutions and family change.

SOC543 - Sem-Comparative Family Systems 543-3 Seminar on Comparative Family Systems. Analysis of cross cultural and historical variation in family structure. Methods and sources of information for research on family structure.

SOC544 - Sociology of Gender 544-3 Sociology of Gender. (Same as WGSS 544) Examines major theories, themes, and research methods on the intersection of gender, race, class, and sexuality. Topics may include: construction of gender, race, class and sexual identities; work; social movements; intersection of family and work; parenting and reproduction; historical and cross-national dimensions.

SOC545 - Gender and Work 545-3 Gender and Work. (Same as WGSS 545) This course is designed to investigate how gender structures the workplace, as well as how men and women both reproduce and negotiate gender at work. Focusing on select topics, we will develop an understanding of workplaces as gendered organizations and discuss sex segregation, wage inequality, the glass ceiling, the glass escalator, sex work, men and women in nontraditional occupations, the body at work, emotional labor, aesthetic labor, immigration and work, globalization, and unemployment and welfare. Also, this class will take an intersectional approach to analyzing and discussing issues of gender inequality at work; meaning, we will take seriously how gender intersects with race, ethnicity, class, and sexuality to shape both inequality and resistance at work.

SOC547 - Gender and Social Change 547-3 Gender and Social Change. (Same as WGSS 547) This graduate seminar is a sociology of gender course that focuses on changes in the subfield itself and in peoples' lived experiences in terms of gender, gender relations, and gender stratification. Readings and discussions will trace the development of the sociology of gender over the last several decades. We will discuss how ideas and theories have changed over the years including changes in concepts and in how sociologists define, problematize, and theorize about sex and gender as traits, identities, relations, structures, and systems. We will also explore 'objective' or actual change (or lack of change) related to gender in individuals, groups, and societies.

SOC550 - Sem in Social Problems 550-3 Seminar in Social Problems. Theoretical perspectives and empirical findings on the emergence and evolution of social problems. Examination of institutional responses and formation of social policy.

SOC551 - Sociology of Religion 551-3 Sociology of Religion. Theoretical and empirical study of the origin, location and function of religious ideas and institutions in society.

SOC552 - Seminar: Race & Ethnic Rels 552-3 Seminar in Race and Ethnic Relations. Overview of theories, research and prevailing issues of race and ethnic relations in contemporary societies. Discussions will include world expansion during colonialism, political economy of minority groups, class and gender issues in the global development.

SOC555 - Social Movements/Coll Actn 555-3 Social Movements and Collective Action. A seminar designed to survey the major sociological approaches to social movements and collective action.

Emphasis will be on movement culture, social movement organizations and the social environment in which collective action occurs.

SOC557 - Revolutions 557-3 Revolutions and Radical Social Change. This course is designed to explore the ways in which revolutions have been theorized. It sets out to study Classical (Chinese, French, and Russian) and Modern (Cuban, Mexican, Iranian, and other Third World) historical cases, as well as contemporary popular uprisings. This course will require students to become familiar with the structural causes of revolution; the cultural and ideological roots of revolutionary mobilization; the emotional, gendered, and story-telling dimensions of revolution-making; and the relationship between globalization and more contemporary attempts at Radical Social Change.

SOC572 - Seminar in Criminology 572-3 Seminar in Criminology. A survey of classical and contemporary theoretical perspectives related to crime and justice.

SOC591 - Individual Research 591-1 to 4 Individual Research Supervised Research Projects. Open to graduate students with a major in sociology. Graded S/U only. Special approval needed from the instructor and departmental director of graduate studies.

SOC596 - Readings in Sociology 596-1 to 8 Readings in Sociology. Supervised readings in selected subjects. Graded S/U only. Special approval needed from the instructor and departmental director of graduate studies.

SOC600 - Dissertation 600-1 to 32 (1 to 16 per semester) Dissertation. Special approval needed from the chair.

SOC601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

SOC699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Sociology Faculty

Alix, Ernest K., Associate Professor, Emeritus, Ph.D., Southern Illinois University, 1966.
Barber, Kristen M., Assistant Professor, Ph.D., University of Southern California, 2011.
Burger, Thomas, Associate Professor, Emeritus, Ph.D., Duke University, 1972.
Calhoun, Thomas C., Professor, Emeritus, Ph.D., University of Kentucky, 1988.
Crowe, Jessica A., Associate Professor, Ph.D., Washington State University, 2008.
Danaher, William F., Professor, PhD., North Carolina State University, 1994.
Hawkes, Roland K., Associate Professor, Emeritus, Ph.D., John Hopkins, 1967.
Hendrix, Lewellyn, Professor, Emeritus, Ph.D., Princeton University, 1974.
Nall, Frank C., II, Associate Professor, Emeritus, Ph.D., Michigan State University, 1959.
Patterson, Edgar I., Assistant Professor, Emeritus, M.A., University of Kansas, 1961.
Reed, Jean-Pierre, Associate Professor, Ph.D., California-Santa Barbara, 2000.
Schneider, Mark A., Associate Professor, Emeritus, Ph.D., Yale University, 1985.
Sherkat, Darren, Professor, Ph.D., Duke University, 1991.
Ward, Kathryn B., Professor, Emerita, Ph.D., University of Iowa, 1982.
Whaley, Rachel B., Associate Professor, Ph.D., University at Albany, State University of New York (SUNY), 1999.
Wienke, Chris, Associate Professor, Ph.D., University of Pittsburgh, 2003.

Social Work

The course of study consists of three major components: (1) required University Core Curriculum course work; (2) required social work major course work; (3) general University electives. The University's Core Curriculum program, required of all students pursuing a bachelor's degree, is a carefully balanced series of courses of inquiry in the sciences, social sciences, humanities, fine arts, English and communication skills, mathematics, health, and multicultural studies. The University Core Curriculum courses in sociology, political science, economics, human biology and psychology are particularly relevant to the Social Work major.

The Social Work requirements in the curriculum include courses that define the role of the profession as it relates to society, politics, and the economy; that provide the conceptual framework to address problems and changed circumstances for individuals, families, groups, and communities; and that examine the structure, functions, policies, programs, and strategies of the social welfare system. Methods courses cover interviewing and interpersonal helping skills, problem solving, group theory, community organization, community development, and social research. This core of courses is designed to give students a solid foundation in understanding, creating and applying research that will help the students become effective professionals and to give the students the potential to add to the body of knowledge that will guide their daily decisions and behavior. The field practicum provides an opportunity to integrate theoretical knowledge and helping skills learned in the classroom with the real world settings of southern Illinois social service agencies. A concurrent weekly seminar supports this integration of theory and practice. The practicum is taken in the second semester of the senior year.

General University electives may be chosen from any University courses which are relevant to personal interests and/or social work. Students may use University electives to pursue a minor in a field of study related to social work major, for example: Africana Studies, Women, Gender, and Sexuality Studies, Child and Family Services, Criminology and Criminal Justice, etc.

Social work majors must maintain a minimum overall grade point average of 2.25 (on a 4.0 scale). Students admitted into the program must achieve at least a grade of C in SOCW 275 & SOCW 383 courses and maintain at least a 2.25 overall grade point average (on a 4.0 scale) in each semester to remain in the program.

Students must have an overall grade point average of 2.50 (on a 4.0 scale) in Core Social Work Courses (SOCW 275, SOCW 383, SOCW 400A, SOCW 400B, SOCW 401, SOCW 402, SOCW 411 and SOCW 421) to enroll in field practicum (SOCW 441 & SOCW 442).

The School of Social Work is accredited by the Council on Social Work Education (CSWE), 1701 Duke St. Suite 200, Alexandria, VA 22314-3457, Phone: (703) 683-8080.

Bachelor of Science Degree in Social Work, College of Education and Human Services

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Requirements for Major in Social Work	60
ANTH 240A, PLB 115 or ZOOL 115, SOC 108, POLS 114, PSYC 102 and ECON 113 or ECON 114	(9)+6
Foundations of Social Work: SOCW 275, SOCW 400A, SOCW 400B, SOCW 411, SOCW 421	15
Social Work Practice: SOCW 383, SOCW 401, SOCW 402, SOCW 441, and SOCW 442	21

Degree Requirements	Credit Hours
Social Work Policy, Practice, and Issues: A total of 6 hours selected from SOCW 350A,B,C, SOCW 361, SOCW 366 or other approved 300- or 400-level University courses	6
SOCW 291	3
At least two Liberal Arts electives at the 300- or 400-level selected from: anthropology, philosophy, history, political science, psychology, sociology	6
An introduction to statistics course: SOCW 397, PSYC 211, SOCW 308, HCM 365, MATH 282 or QUAN 402	3
General Electives	21
Total	120

Social Work Courses

SOCW275 - Social Welfare as Social Inst 275-3 Social Welfare as a Social Institution. Explores the interdependence of social, cultural, political and economic factors in the history and practice of social welfare with special reference to development of the social work profession. Focus on service integration and coordination in community-based delivery systems in rural areas, especially for poor and oppressed populations.

SOCW291 - Social Servcs Minority Groups 291-3 Social Services and Minority Groups. Exploration of the needs, experiences and attitudes of minority populations pertaining to delivery of social services in rural settings. Emphasis on relationship of cultural diversity to practice, policy and research content.

SOCW295 - Volunteerism & Service 295-1 to 6 Volunteerism and Service Learning in Social Work. This course is designed for freshmen and sophomores who are volunteering service to community, social service, or health agencies in southern Illinois. Credit based upon time spent in direct service. Mandatory Pass/Fail.

SOCW350A - SW Special Issues Practice 350A-1 (1 credit per topic) Social Work Special Issues-Practice. May be repeated up to 2 semester hours. Topics will be selected. Limit to no more than one credit hour per semester. Restricted to junior standing or higher.

SOCW350B - SW Special Issues Policy 350B-1 (1 credit per topic) Social Work Special Issues-Policy and Planning. May be repeated up to 2 semester hours. Topics will be selected. Limit to no more than one credit hour per semester. Restricted to junior standing or higher.

SOCW350C - SW Special Issues-Welfare 350C-1 (1 credit per topic) Social Work Special Issues-Public Welfare Services. May be repeated up to 2 semester hours. Topics will be selected. Limit to no more than one credit hour per semester. Restricted to junior standing or higher.

SOCW361 - Child & Family Services 361-3 Child and Family Services. Problems of child-parent relationships and difficulties in social functioning of children and adolescents. Adoptions, foster home and institutional placements, protective services. Focus on services in rural areas. Restricted to junior standing or higher.

SOCW363 - Social Work with the Aged 363-3 Social Work with the Aged. Basic concepts of social work methods applied to the older adult group. Characteristics of the aged group, its needs and potentials. Social trends and institutions involved in services to the aged. Restricted to junior standing or higher.

SOCW366 - Public Policies & Programs Aged 366-3 Public Policies and Programs for the Aged. An introduction to public policy, program and planning for the aged. A framework is utilized for analyzing policy issues, programs and research in such areas as income maintenance, long term care, transportation, leisure time, housing and social services in order to aid present and future practitioners who work with the aged. Restricted to junior standing or higher.

SOCW383 - Social Work Interviewing 383-3 Social Work Interviewing and Interpersonal Helping Skills. This is an introductory course on interpersonal skills in social work practice within a systems context. Intake, interviewing and recording are emphasized. Focus on practice in multi-service settings. Prerequisite: PSYC 102. Restricted to Social Work majors only. Restricted to junior standing or higher.

SOCW396 - Readings in Social Work 396-1 to 3 Readings in Social Work. Varying elective topics not ordinarily covered in depth in regular courses and of specific interest to advanced students. Special approval needed from the instructor.

SOCW397 - Statistics for SW 397-3 Statistics for Social Work. Statistical methods as applied to social work, focusing on basic descriptive and inferential statistics and their relationship to social work research. Students are provided with statistical methods and models that are applicable to social work research. Lastly, students are prepared to critically analyze published research and apply statistical principles in their own research. Restricted to Social Work majors only at junior standing or higher.

SOCW400A - HSBE in SW I 400A-3 Human Behavior and the Social Environment in Social Work I. The first of two courses that examine the normal and dysfunctional life span development from a systems theory perspective. This course focuses on the behavior of individuals and families. It also explores the impact of the environment and the implications for generalist practice with rural populations. Not for graduate credit. Prerequisite: PLB 115 or ZOOL 115 or ANTH 240A and SOC 108. Restricted to Social Work majors only at junior standing or higher.

SOCW400B - HBSE in SW II 400B-3 Human Behavior and the Social Environment in Social Work II. The second of two courses that examines the normal and dysfunctional life span development from a systems theory perspective that is used to examine the theoretical and practice implications of the life cycle as they relate to the development of groups and organizations. Not for graduate credit. Prerequisite: PLB 115 or ZOOL 115 or ANTH 240A and SOC 108. Restricted to Social Work majors only at junior standing or higher.

SOCW401 - Generalist Practice I 401-3 Generalist Practice in Social Work I. The first of two courses, which prepares for generalist practice. Focuses on intervention skills with individuals and families at a beginning level of proficiency. Emphasis on assessment and treatment in multi-service agencies in rural settings. Not for graduate credit. Prerequisite: SOCW 275 and SOCW 383. Restricted to Social Work majors only at junior standing or higher.

SOCW402 - Generalist Practice II 402-3 Generalist Practice in Social Work II. Generalist practice skills and knowledge with groups, organizations and communities at beginning level of proficiency. Emphasis on assessment and treatment in multi-service agencies in rural settings. Not for graduate credit. Prerequisite: SOCW 275 and SOCW 383. Restricted to Social Work majors only at junior standing or higher.

SOCW411 - Research Methods in SW 411-3 Research Methods in Social Work. Social work research in generalist practice. Examines the principles, concepts and methods of scientific investigation in terms of its application to social work research and practices. Provides basic skills for self-assessment research in field practicum in spring semester. Not for graduate credit. Prerequisite: SOCW 397, SOC 308, QUAN 402, MATH 282, PSYC 211 or approved statistics course. Restricted to Social Work majors only at junior standing or higher.

SOCW421 - Social Welfare Policy 421-3 Social Welfare Policy. In-depth examination of current social welfare policy and program issues in the context of social welfare history in the United States. Utilizes a systematic analytical framework for critical study of multiple causal factors (socio-economic, cultural,

governmental structure). Prerequisites: ECON 113, POLS 114, SOCW 275. Not for graduate credit. Restricted to Social Work majors only at junior standing or higher.

SOCW441 - Field Practicum 441-9 Field Practicum. Students are expected to complete 420 hours in an approved social service agency during the course of the semester. Utilizes learning contracts with goals, objectives and evaluation to integrate course content into practice, including practice self-assessment. Not for graduate credit. Mandatory Pass/Fail. Restricted to senior standing with GPA of 2.50 in core social work courses. Prerequisites: SOCW 275, 291, 383, 400A, 400B, 401, 402, 411, 421. Must be taken concurrently with weekly practicum seminar, SOCW 442.

SOCW442 - Field Practicum Seminar 442-3 Field Practicum Seminar. The seminar assists the student who is in field practicum to systematically conceptualize and integrate the field experience with generalist systems theory, skills and knowledge. The seminar builds on and reemphasizes content provided in previous social work courses. Seminar discussion focuses on shared fieldwork experiences: practice issues related to social work principles, ethics and professionalism, and intervention strategies. Not for graduate credit. To be taken concurrently with SOCW 441.

SOCW446A - Sel Topics: Counsel w/Indivdls 446A-3 Selected Topics: Social Work Counseling With Individuals. (Same as SOCW 546A) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446B - Sel Topics: Practice w/Groups 446B-3 Selected Topics: Social Work Practice with Groups. (Same as SOCW 546B) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446C - Sel Topics: SW Intervention 446C-3 Selected Topics: Social Work Intervention with Traumatic Stress Events. (Same as SOCW 546C) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446D - Sel Topics Medical Social Work 446D-3 Selected Topics: Medical Social Work. (Same as SOCW 546D) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446E - Sel Topics: Substnc Abuse & MH 446E-3 Selected Topics: Substance Abuse and Mental Health. (Same as SOCW 546E) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446F - Sel Topics: SW Family Therapy 446F-3 Selected Topics: Social Work Family Therapy. (Same as SOCW 546F) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446G - Sel Topics Admin Grant Writing 446G-3 Selected Topics: Administration and Grant Writing. (Same as SOCW 546G) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446H - Sel Topics: Child Welfare 446H-3 Selected Topics: Child Welfare. (Same as SOCW 546H) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446I - Sel Topics: Spirituality 446I-3 Selected Topics: Spirituality. (Same as SOCW 546I) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446J - Selected Topics: Adoption 446J-3 Selected Topics: Adoption. (Same as SOCW 546J) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446K - Military Social Work 446K-3 Selected Topics: Military Social Work. (Same as SOCW 546K) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW446L - Selected Topics: Other 446L-3 Selected Topics: Other. (Same as SOCW 546L) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW478A - Intl Social Work Germany 478A-3 to 6 International Social Work: Generalist Policy and Practice-Germany. Provides an international perspective for the study of social work groups,

organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW478B - Intl Social Work Mexico 478B-1 to 6 International Social Work: Generalist Policy and Practice-Mexico. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW478C - Intl Social Work India 478C-1 to 6 International Social Work: Generalist Policy and Practice-India. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW478D - Intl Social Work Bangladesh 478D-1 to 6 International Social Work: Generalist Policy and Practice-Bangladesh. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW478E - Intl Social Work Canada 478E-1 to 6 International Social Work: Generalist Policy and Practice-Canada. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW478F - Intl Social Work South America 478F-1 to 6 International Social Work: Generalist Policy and Practice-South America. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW478G - Intl Social Work Asia 478G-1 to 6 International Social Work: Generalist Policy and Practice-Asia. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW478H - Intl Social Work Africa 478H-1 to 6 International Social Work: Generalist Policy and Practice-Africa. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW478I - Intl Social Work Classroom Based 478I-1 to 6 International Social Work: Generalist Policy and Practice-Classroom Based. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW478J - Intl Social Work Other 478J-1 to 6 International Social Work: Generalist Policy and Practice-Other. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

SOCW496 - Independent Research in SW 496-1 to 3 Independent Research in Social Work. Provides opportunity for students to conduct independent research with the guidance of a faculty member. Topics of research are identified by the student and faculty member. Special approval needed from the instructor.

SOCW500 - Human Behavior 500-3 Human Behavior and the Social Environment in Social Work. Life span development. Students acquire a foundation knowledge in human development in the social environment over the life span. Normal development stages and impacts of social systems on the growth of individuals in diverse populations of rural areas is emphasized. Restricted to admission to the School of Social Work.

SOCW501 - Generalist Practice 501-3 Generalist Practice. This course emphasizes the development of advanced intervention skills related to generalist practice with individuals, families, groups, organizations

and communities in multiple-service, community-based agencies characteristic of rural areas. Restricted to admission to the program.

SOCW502 - HSBE for Social Work 502-3 Perspectives on Human Behavior for Social Work Practice. Selective examination of the theoretical basis of development and inter-relational aspects of individuals and families throughout the life span. Normal development stages and impacts of social systems on the growth of individuals in diverse populations of rural areas is emphasized. Prerequisite: eligibility for advanced standing. Must be taken concurrently with SOCW 512 and SOCW 522. Grade of B or better is required. Restricted to admission to the School of Social Work with eligibility for advanced standing.

SOCW504 - Ethnic Diversity 504-2 Ethnic Diversity in Social Work. Examination of issues involved in delivering social services to various ethnic and cultural groups. Sensitizes students to personal, familial, or community problems of ethnic or cultural origin. Implications for understanding social services to populations who have experienced discrimination are discussed. Restricted to admission to the program.

SOCW505 - Foundations of SW Service 505-2 Foundations of Social Work and Services. Examination of both historical and philosophical developments of the social welfare system as an institution and social work as a profession in the United States. Future trends in social work education and practice are predicted based on social and political mentality prevailing at present time. Restricted to admission to program.

SOCW510 - Families and Groups 510-3 Families, Groups and Organizations in Social Work. Examination of systems and advanced generalist practice theories within the context of rural, integrated and multiple-service social services delivery systems. Specific practice examples will be used to facilitate understanding of how theory guides practice with families, groups, organizations and communities. Restricted to admission to the program.

SOCW511 - Social Work Research 511-3 Social Work Research. This course emphasizes the importance of scientific inquiry within social work practice and covers the application of basic concepts of research methodology to social work including problem formulation, research design, sampling, measurement, and data analysis. Includes single-system methodology as it applies to social work practice in rural areas. Prepares students to conduct an individualized single-system project based on practice intervention with clients or systems in their practicum setting in the final semester of their studies. Prerequisite: an introduction to statistics course or concurrent enrollment allowed. Restricted to admission to the program.

SOCW512 - Advanced SW Research 512-3 Advanced Social Work Research. Selective examination of inductive and deductive methods in social work knowledge building. Includes research methodologies and group designs as applied to social work practices in rural areas. Prepares students to conduct an individualized single-system project based on practice intervention with clients or systems in their practicum setting in the final semester of their studies. Prerequisite: eligibility for advanced standing. Must be taken concurrently with SOCW 502 and 522. Grade of B or better is required to continue in the advanced standing program. Restricted to Master of Social Work students only.

SOCW520 - Social Work Practice II 520-3 Social Work Practice II. Foundation practice focusing on process, methods, and skills for work with groups, communities, and organizations. Prerequisite: SOCW 510.

SOCW521 - Social Work Policy 521-3 Social Work Policy Practice. Examines the historical development of social welfare and professional social work in Europe and the United States. The course introduces a systematic framework for policy analysis with particular attention paid to policies affecting diverse rural populations, women and minorities. Restricted to admission to the program; restricted to social work graduate students only.

SOCW522 - Advanced SW Policy Practice 522-3 Advanced Social Work Policy Practice. Selective examination of the historical development of social welfare and professional social work in Europe and the United States. Uses a systematic framework for policy analysis with particular attention paid to policies affecting women, low income, oppressed, and diverse rural populations. Prerequisite: eligibility for advanced standing. Must be taken concurrently with SOCW 502 and 512. Grade of B or better is required to continue in the advanced standing program. Restricted to Master of Social Work students only.

SOCW530 - Subst Abuse & SW Practice 530-3 Substance Abuse and Social Work Practice. In-depth knowledge of social work assessment of both individuals and families involved in substance abuse. Students are provided with advanced knowledge and skills in various social work intervention models applicable to the area of substance abuse.

SOCW531 - Psychosocial Disorders 531-3 Psychosocial Disorders in Social Work Practice. This course provides a basic knowledge of psychopathology and how it impacts individual functioning and family dynamics. Students become familiar with the theoretical basis and the basic structure of DSM-IV and models of interdisciplinary clinical practice in mental health. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B).

SOCW532 - Program Evaluation for SW 532-3 Program Evaluation for Social Work. This course focuses on the application of research methods especially in evaluating programs or program components in the area of concentration and to the practicum experience. Includes content on self-evaluation in practice. Prerequisite: grade of B or better in SOCW 511 or SOCW 512 and an introduction to statistics course. Restricted to Master of Social Work students only.

SOCW533 - SW Practice in Schools 533-2 Social Work Practice in the Schools. In-depth examination of the history and practice of social work in primary and secondary schools. Roles of school social workers and practice approaches are emphasized. Prerequisite: completion of foundation or transition courses, SPED 408 or SPED 420. Restricted to admission to the School of Social Work certification program.

SOCW535 - Legal Aspects of SW Practice 535-3 Legal Aspects of Social Work Practice. Examination of law and legal procedures that relate directly to social work practice in general. Legal perspectives of a specific concentration field of practice are discussed in depth.

SOCW541A - Foundation Seminar I 541A-2 Foundation Seminar I. Seminar which is taken concurrently with Foundation Practicum I. The seminar emphasizes the relationship between the practicum experience, social work practice, policy, human behavior and the social environment (HBSE) and research curricula. Restricted to admission to the program.

SOCW541B - Foundation Practicum I 541B-2 Foundation Practicum I. Field practicum which is taken concurrently with Foundation Seminar I and is a structured and supervised on-site field practice in a selected agency. Practicum is equivalent to 12 hours per week for 15 weeks (a total of 360 hours) over two semesters. Graded S/U. Restricted to admission to the program and concurrent registration in SOCW 541A.

SOCW542A - Foundation Seminar II 542A-2 Foundation Seminar II. Seminar which is taken concurrently with Foundation Practicum II and serves as a continuation of SOCW 541A. The seminar emphasizes the relationship between the practicum experience, social work practice, policy, human behavior and the social environment (HBSE) and research curricula. Prerequisite: SOCW 541A&B. Restricted to Master of Social Work students only.

SOCW542B - Foundation Practicum II 542B-2 Foundation Practicum II. Field practicum which is taken concurrently with Foundation Seminar II and serves as a continuation of SOCW 541B, which is a structured and supervised on-site field practice in a selected agency with concurrent seminar. This is the second on-site field practice with concurrent seminar. Continuation of SOCW 541B. Graded S/U. Prerequisite: SOCW 541A&B and concurrent registration in SOCW 542A. Restricted to Master of Social Work students only.

SOCW543A - Adv Practicum Seminar I 543A-3 Advanced Practicum Seminar I. Concentration specific practicum seminar with concurrent field practicum, SOCW 543B. Practicum seminar focuses on the application of advanced generalist theory, knowledge and skills covered in the curriculum within the specific concentration area (Children, Youth and Families/School Social Work; Health/Mental Health). Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to Master of Social Work students only.

SOCW543B - Advanced Practicum I 543B-3 Advanced Practicum I. On-site concentration specific field practice in an approved agency with appropriate supervision equivalent to 20 hours per week for 15 weeks (a total of 607 hours is required to be completed in two semesters) with a concurrent seminar. The practicum focuses on the application of advanced concentration theory, knowledge and skills covered in

the curriculum. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, 542A&B). Concurrent enrollment required in SOCW 543A. Graded S/U. Restricted to Master of Social Work students only.

SOCW544A - Adv Practicum Seminar II 544A-3 Advanced Practicum Seminar II. A continuation of the concentration specific practicum seminar concurrent field practicum SOCW 544B. Continuation of SOCW 543A. Prerequisite: SOCW 543A&B and registration in SOCW 544B. Restricted to Master of Social Work students only.

SOCW544B - Advanced Practicum II 544B-3 Advanced Practicum II. A continuation of the concentration specific practicum of 20 hours per week in the field for 15 weeks with a concurrent seminar, SOCW 544A. Graded S/U. Continuation of SOCW 543B. Prerequisite: SOCW 543A&B and concurrent registration in SOCW 544A. Restricted to Master of Social Work students only.

SOCW546A - Sel Topics:Counsel Individuals 546A-3 Selected Topics: Social Work Counseling with Individuals. (Same as SOCW 446A) (May be repeated with different sections).

SOCW546B - Sel Topics: Practice w/Groups 546B-3 Selected Topics: Social Work Practice with Groups. (Same as SOCW 446B) (May be repeated with different sections).

SOCW546C - Sel Topics: Intervention 546C-3 Selected Topics: Social Work Intervention with Traumatic Stress Events. (Same as SOCW 446C) (May be repeated with different sections).

SOCW546D - Sel Topics:Medical Social Work 546D-3 Selected Topics: Medical Social Work. (Same as SOCW 446D) (May be repeated with different sections).

SOCW546E - Sel Topics: Substnc Abuse & MH 546E-3 Selected Topics: Substance Abuse and Mental Health. (Same as SOCW 446E) (May be repeated with different sections).

SOCW546F - Selected Topics:Family Therapy 546F-3 Selected Topics: Social Work Family Therapy. (Same as SOCW 446F) (May be repeated with different sections).

SOCW546G - Sel Topics:Admin/Grant Writing 546G-3 Selected Topics: Administration and Grant Writing. (Same as SOCW 446G) (May be repeated with different sections).

SOCW546H - Selected Topics: Child Welfare 546H-3 Selected Topics: Child Welfare. (Same as SOCW 446H) (May be repeated with different sections).

SOCW546I - Selected Topics: Spirituality 546I-3 Selected Topics: Spirituality. (Same as SOCW 446I) (May be repeated with different sections).

SOCW546J - Selected Topics: Adoption 546J-3 Selected Topics: Adoption. (Same as SOCW 446J) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW546K - Military Social Work 546K-3 Selected Topics: Military Social Work. (Same as SOCW 446K) (May be repeated with different sections). Restricted to junior standing or higher.

SOCW546L - Selected Topics: Other 546L-3 Selected Topics: Other. (Same as SOCW 446L) (May be repeated with different sections).

SOCW550 - SW Practice in H/MH 550-2 Social Work Practice in Health and Mental Health Settings. Examination of social and emotional impacts of illness and death on individuals. Implications of physical and mental disorders to social work practice are discussed with particular emphasis on cultural, racial, religious, gender and other psychosocial aspects of illness. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B).

SOCW551 - Adv SW Practice I: H/MH 551-3 Advanced Social Work Practice I: Health and Mental Health. This is the first of a two-part course that emphasizes health and mental health delivery within systems theory and an advanced generalist practice skills framework. Includes case studies and exercise aimed at practice with diverse populations in rural areas. Prerequisite: completion of foundation or

transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to Master of Social Work students only.

SOCW552 - Adv SW Practice II: H/MH 552-3 Advanced Social Work Practice II: Health and Mental Health. The second part of the practice course on advanced skills in health and mental health. Continuation of SOCW 551. Application of treatment modalities. Prerequisite: SOCW 543A&B & SOCW 551. Restricted to Master of Social Work students only.

SOCW555 - Adv Policy & Practice: H/MH 555-3 Advanced Policy Analysis and Practice: Health and Mental Health. This course applies a systematic analytical framework for a critical and in-depth analysis of federal, state and local policies that shape programs affecting health and mental health in rural settings. Examines how policy impacts practice with diverse populations. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to Master of Social Work students only.

SOCW557 - Cmnty Mntl Hlth & the Afri Amr 557-3 Community Mental Health and the African-American. Introduction to clinical techniques useful for facilitating community functions and changes within the context of the African-American experience. An exploration of the culture of the African-American community builds the basis for community mental health service strategies.

SOCW558 - Women & Cmnty Mntl Hlth 558-3 Women and Community Mental Health. Examination of mental health problems of American women and exploration of effective interventive strategies. Emphasis on rural mental health services for low-income women.

SOCW559 - Aging & Mental Health 559-3 Aging and Mental Health. (Same as GRON 559) Examination of the nature and etiology of mental health problems facing older Americans. Review of research reports to build a theoretical basis for mental disorders.

SOCW560 - SW Practice Children & Youth 560-2 Social Work Practice with Children and Youth. Advanced level of knowledge and skills that are relevant to the prevention and amelioration of problems related to maladaptive parent-child interaction, parental inability to provide child care, parents' unrealistic expectations of a physically and mentally limited child. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to Master of Social Work students only.

SOCW561 - SW Practice I: C, Y & F 561-3 Social Work Practice I: Children, Youth and Family. This is the first part of a two-part course that emphasizes family-centered practice (family preservation, integrated services) within systems theory and an advanced generalist practice skills framework. Includes case studies and exercises aimed at practice with diverse populations in rural areas. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to Master of Social Work students only.

SOCW562 - SW Practice II: C, Y, & F 562-3 Social Work Practice II: Children, Youth and Family. The second part of the practice course on advanced skills. Continuation of SOCW 561. Application of treatment modalities. Prerequisite: SOCW 543A&B & SOCW 561. Restricted to Master of Social Work students only.

SOCW565 - Adv Policy & Practice: CYF 565-3 Advanced Policy Analysis and Practice: Children, Youth and Families. This course applies a systematic analytical framework for a critical and in-depth analysis of federal, state and local policies that shape programs affecting children, youth, and families in rural settings. Examines how policy impacts practice with diverse populations. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B). Restricted to Master of Social Work students only.

SOCW565B - School SW Policy & Prog 565B-3 Advanced Policy Analysis: Children, Youth and Families. This course applies a systematic analytical framework for a critical and in-depth analysis of federal, state and local policies that shape programs affecting children, youth and families in rural settings. Examines how policy impacts practice with diverse populations. Prerequisite: completion of foundation transition courses.

SOCW567 - Adv School SW Issues 567-2 Advanced School Social Work Issues. Exploration of policies, programs, practice and legislative trends affecting public service in school social work. Prerequisite: SOCW 533. Restricted to Master of Social Work students only.

SOCW570 - Gerontology & Social Work 570-3 Gerontology and Social Work. Examines the major psycho-social and ecological theories of human aging within the framework of social work practice. Extrapolations of those theories and application of them to social work practice and research are emphasized.

SOCW575 - Policy & Program Issues Aging 575-3 Policy and Program Issues of Aging. (Same as GRON 575) Examination of public policies that impact on the quality of life of the elderly. Major programs are identified and analyzed. Future policy issues are discussed.

SOCW576 - Selected Topics in Aging 576-1 to 6 Selected Topics in Aging Practice Issues. Examination of selected knowledge and skills useful for gerontological social work practice. In-depth study on specific topics will be conducted. Prerequisite: SOCW 570.

SOCW577 - Selected Topics: Research 577-1 to 4 Selected Topics in Research. Individualized advanced research projects related to student interest. Graded S/U. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B).

SOCW578 - International Social Work 578-3 to 6 International Social Work. Critical examination of the nature and scope of social welfare programs in other nations including: personal social services, income maintenance, health care and social development programs.

SOCW598 - SW Research Paper 598-1 to 4 Social Work Research Paper. Preparation of a final research paper as partial requirement for the M.S.W. degree. Graded S/U only. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B).

SOCW599 - Thesis in Social Work 599-3 Thesis in Social Work. A partial and optional requirement for the M.S.W. degree. A written report of the student's research project in the chosen area of concentration. Graded S/U only. Prerequisite: completion of foundation or transition courses (SOCW 502, 512, & 522 or SOCW 500, 501, 504, 510, 511, 521, 541A&B, & 542A&B).

SOCW601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs or who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Social Work Faculty

Brinker, Paul W., Graduate Field Coordinator and Lecturer, M.S.W., Southern Illinois University Carbondale, 1996.

Buila, Sarah, Associate Professor and Graduate Program Director, Ph.D., University of Illinois at Urbana-Champaign, 2005.

Dreuth Zeman, Laura, Professor, Retired, Ph.D., Vanderbilt University at Nashville, 1996.

Jurkowski, Elaine T., Professor, Ph.D., University of Illinois at Chicago, 1997.

Kawewe, Saliwe, Professor and Director, Ph.D., St. Louis University, 1985.

Koen, Nina, Lecturer and Undergraduate Field Coordinator, M.S.W., Southern Illinois University, 2007.

Reese, Dona, Professor, Ph.D., University of Maryland at Baltimore, 1994.

Reichert, Elisabeth, Professor, Ph.D., University of Tennessee at Knoxville, 1989.

Saleeby, Patricia, Associate Professor, Ph.D., Washington University, 2005.

Soliman, Hussein, Professor, Ph.D., University of Tennessee, 1993.

Special Education

The Department of Counseling, Quantitative Methods, and Special Education offers an undergraduate major in special education, which entitles the student to qualify for the State of Illinois Professional Educator License with the Learning Behavior Specialist I endorsement. The special education major prepares teachers to teach students with disabilities, elementary and secondary levels of education receiving services along the full continuum of service delivery options. This program is fully approved by the Illinois State Board of Education and National Council for the Accreditation of Teacher Education (NCATE).

Admission:

To be considered a Special Education major students must meet the following requirements:

1. Meet the criteria for admission into the College of Education and Human Services Teacher Education Program.
2. Completion of a minimum of 30 semester hours in University Core Curriculum courses with an overall grade point average of 2.75 (4.0).
3. Passing score on the Illinois Basic Skills Test or the Illinois Test of Academic Proficiency or:
ACT Plus Writing: 22 or higher on the ACT + Writing with a 19 or higher in combined English/Writing (for test dates prior to September 1, 2015) or a 16 in Writing (for test dates September 1, 2015 or later) - ACT Plus Writing must be EIS-verified; or
SAT: composite of 1030 or higher (critical reading + mathematics) with a minimum of 450 in writing (for test dates prior to March 5, 2016) or a composite score of 1110 (Evidence -based Reading and Writing + Mathematics = 1110 or higher) and a minimum score of 26 on Writing and Language Test (for test dates March 5, 2016 or later) - SAT Plus Writing must be ELIS-verified. With the exception of the TAP, sub scores from different test dates cannot be combined.

Transfer students must meet University admission requirements to be a Special Education major. Students who are currently enrolled or previously attended SIU in a major other than Special Education may request admission to the Special Education program.

Retention Criteria.

There are specific and sequential criteria for a student to be retained as a special education major. All program courses must be completed with a grade of C or better. Other retention criteria include: (a) attainment of an overall grade point average of 2.75, and (b) a favorable endorsement of the special education faculty.

To be eligible for the professional semester (EDUC 401A: Student Teaching) the student must have attained a minimum 2.75 GPA in the major.

Bachelor of Science Degree in Special Education, College of Education and Human Services

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
To include PSYC 102, EDUC 211, EDUC 214, and MATH 220 or CI 220	
Requirements for Major in Special Education	42
SPED 300, SPED 410, SPED 411, SPED 417, SPED 418, SPED 419, SPED 421, SPED 422, SPED 423, SPED 425, SPED 430; additional requirements: MATH 388 or CI 388, CDS 328, ISAT 229	
Professional Education Requirements	26

Degree Requirements	Credit Hours
EDUC 301, EDUC 302, EDUC 313, EDUC 319, EDUC 400, EDUC 401A	
Additional Degree Requirements	9
Total	120

1 Check with your advisor to complete non-western civilization/third world culture requirement.

Special Education Courses

SPED300 - Intro to Special Education 300-3 Introduction to Special Education. An overview of characteristics of all types of exceptional children and youth including physical, mental, emotional and social traits. The course also covers the effects of disabling conditions in learning situations, and an overview of the history of special education including legislation and litigation.

SPED315 - Teaching Math 315-3 Teaching Mathematics in the Elementary School. Objectives of mathematics education, learning theory as it is related to mathematics, major concepts to be taught, modern approaches to instruction with emphasis on the use of concrete learning aids. Four class hours and two laboratory hours per week. Prerequisite: An overall GPA of 2.5 or consent of instructor. Restricted to junior standing.

SPED403 - Chrtristics Child/Youth Gifted 403-3 Characteristics of Children and Youth Labeled Gifted. Designed to help teachers in the identification of and programming for children labeled gifted and talented. Prerequisite: SPED 300 or concurrent enrollment or consent of the department chair.

SPED405 - Early Childhood Sped Methods 405-3 Introduction to Early Childhood Special Education Methods: Infants, Toddlers, and Preschoolers with Special Needs. This course focuses on effective methods, materials and programs for infants, toddlers, and preschoolers with special needs, including IEPs, IFSPs, working with families, service delivery, case-management, transition planning, and curriculum methods and procedures. Prerequisite: SPED 412 or consent of instructor.

SPED408 - C&M Teach Exceptional Child 408-3 Characteristics and Methods for Teaching Exceptional Children. (Same as EDUC 308) For pre-service teachers who serve children and youth with disabilities. The course focuses on essential disability characteristics, data-based decision-making, scientifically-based academic and behavioral interventions and strategies to differentiate instruction and accommodate learners with disabilities in general education classrooms.

SPED409 - Cross-Cultural Studies 409-1 to 6 Cross-Cultural Studies. Seminar and/or directed independent study concerned with socio-cultural variables affecting the educational needs of children and youth with a disability. Prerequisite: SPED 300 or consent of instructor and department chair.

SPED410 - Inst Plan Student-Disabilities 410-3 Instructional Planning for Students with Disabilities. This course presents the learning characteristics of children and youth with learning disabilities, emotional/behavior disorders, intellectual disabilities and autism spectrum disorders. Instructional planning, classroom management and integration of related services will be examined. Prerequisite: SPED 300 or 420 or concurrent enrollment.

SPED411 - Assessment in Special Ed 411-3 Assessment in Special Education. Course covers general assessment information, norm reference testing, curriculum based assessment, adaptive behavior scales and issues relating to cultural diversity. Prerequisite: SPED 300 or 420, 410, or concurrent enrollment. Laboratory fee: \$15.

SPED412 - Intro Assessment: E.C.S.E 412-3 Introduction to Assessment and Curriculum Methods in Early Childhood Special Education. This course presents an introduction to child and family assessment

and the development of child and family goals in Early Childhood Special Education. Topics will include types of assessment commonly used, rationale for assessment, methods of assessment, reporting assessment results, writing child and family goals. A fee for testing materials is required. Prerequisite: SPED 300/420 or concurrent enrollment or consent of instructor. Fee: \$15.

SPED417 - Behvr Mgmt: Child/Youth Disabs 417-3 Behavior Management for Children and Youth with Disabilities. This course focuses on the implementation of behavior management strategies and tactics to be used with students with disabilities in a variety of educational environments. Prerequisite: SPED 300 or 420, 410, 411, 423, and must be admitted to the TEP as a special education major, or consent of instructor.

SPED418 - Methods Teach Functnl Curr 418-3 Methods and Materials for Teaching a Functional Curriculum. This course covers the principles of curriculum construction, program development and evaluation, classroom organization, instructional approaches, strategies and materials for teaching a functional curriculum. Prerequisite: SPED 300 or 420, 410, and 423, and must be admitted to the TEP as a special education major, or consent of instructor.

SPED419 - Academic Methods 419-3 Academic Methods and Materials for Student with Disabilities. This course covers the academic methods, materials and strategies used with students with disabilities receiving special education services in school and community settings. Prerequisite: SPED 300 or 420, 410, 411, 423 and must be admitted to the Teacher Education Program as a special education major.

SPED420 - Advanced Theories & Practices 420-3 Advanced Theories and Practices in Special Education. The course is an advanced survey of exceptional populations and addresses educational, social, legal, cultural and community practices associated with individuals with disabilities, ages 0 - 21 years old.

SPED421 - Read Content Students Disablt 421-3 Reading in the Content Areas for Students with Disabilities. This course prepares pre-service special educators to deliver effective content area reading instruction to struggling readers with disabilities mainly in middle and secondary schools. Specifically, students will develop a knowledge base of research and best practices for developing academic vocabulary, reading comprehension, and background knowledge in science and social studies. In addition, students will develop a repertoire of teaching skills to provide instruction to struggling middle and secondary school readers. The course content will include: (a) designing and implementing individualized education programs in accordance with Illinois Professional Teaching Standards, LBS I Standards and CEC Common Core Standards; (b) developing and utilizing assessment tools to design and implement reading instruction in content areas; (c) identifying and utilizing evidence-based instructional strategies in academic content areas; (d) developing and integrating reading elements, writing and study skills instruction into content areas; (e) developing and implementing adaptations to assessment and instructional activities; and (f) identifying and using technology applications to design individualized instructional lessons, monitor instructional effectiveness, and to report results of student outcomes. Prerequisites: SPED 300, 410, 411, 422 and 423 with grades of C or better.

SPED422 - Teach Read Elementary School 422-3 Teaching Reading in the Elementary School. Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis on the formulation of a philosophy of reading in relation to methods, materials, procedures, and evaluation for students with reading difficulties at the elementary level. Prerequisites: SPED 300 or SPED 420 with grades of C or better or concurrent enrollment.

SPED423 - General Procedures Special Ed 423-3 General Procedures in Special Education. Presents key provisions of Public Law 94-142 and subsequent amendments, including Individualized Education Programs (IEPs). Course content also includes principles of applied behavior analysis and effective instruction of students with disabilities. Prerequisite: SPED 300 or 420, 410, 411 or concurrent enrollment.

SPED425 - Home-School Coordination SPED 425-3 Home-School Coordination in Special Education. The course covers techniques used in parent interviews, conferences and referrals by school personnel; due process and procedural safeguards for parents and youth with disabilities. Prerequisite: SPED 300 or 420, 410, 411, 423 with grades of C or better or concurrent enrollment.

SPED430 - Secondary Programming 430-3 Secondary Programming for Students with Disabilities. Deals with modifications of and additions to school programs to ensure that they are appropriate to the

needs of adolescents with disabilities. Content includes coverage of remedial and compensatory program models, transition programming, career and vocational education. Prerequisite: SPED 300 or 420, 410, 411, 423 with grades of C or better or concurrent enrollment.

SPED431 - Work Study Adol Severely Disbld 431-3 Work-Study Programs for Adolescents Labeled Severely Disabled. This course is designed to prepare educators and other human service professionals to assist adolescents and young adults with severe disabilities for community integrated employment options. Content will include community-referenced curriculum objectives, community-based instruction for employment and functional skill development.

SPED490 - Readings in Special Education 490-1 to 4 Readings in Special Education. Study of a highly specific problem area in the education of exceptional children. Open only to selected seniors. Not for graduate credit. Prerequisite: SPED 300. Special approval needed.

SPED494A - Practicum in SPED-Assessment 494A-1 Practicum in Special Education-Assessment. This course includes clinical experiences in public school and community settings in the selection, administration and interpretation of norm-referenced and curriculum-based assessments, adaptive behavior scales, behavior rating scales and checklists and issues relating to cultural diversity. Prerequisite: SPED 300 or 420 and 410 with grades of C or better.

SPED494B - Practicum-Functional Curriculum 494B-1 Practicum in Special Education-Functional Curriculum. This course includes clinical experiences in public school and community settings in planning, implementing and instructing a functional curriculum. Prerequisite: SPED 300 or 420, 410, 411, 423 and must be admitted to Teacher Education Program.

SPED495 - Internship-Special Education 495-1 to 6 Internship in Special Education. An applied experience for students seeking certification in special education through alternative or subsequent certificate routes. Students will be required to complete a set of activities and prepare a number of products appropriate for the special education program and/or students with disabilities being served in the internship placement. Students will be expected to complete a portfolio of products to demonstrate professional competence. Special approval needed from the Program Coordinator.

SPED500 - Res Issues in Special Educ 500-3 Research Issues in Special Education. Students will study issues and research practices in special education and will learn how they both conduct research, translate research findings and develop practices in special education based on research outcomes. Special approval needed from the instructor.

SPED501 - Methods: Severe Behv 501-3 Methods and Materials for Persons with Severe Behavior Challenges. Deals with methods, materials and instructional management practices common to the instruction and management of student experiencing severe behavioral challenges in the schools and in residential settings.

SPED503 - Progs-Gifted & Talented 503-3 Educational Program Delivery for Gifted and Talented Students. Planning implementation and evaluation of differential educational programs for gifted and talented students. Reviews historical through modern day approaches to the systematic delivery of educational services to exceptional populations. Evaluation methods for the expansion and refinement of gifted programming are planned. Prerequisite: SPED 403.

SPED505 - Organize Implement EC SPED 505-3 Organizing and Implementing Early Childhood Special Education Programs. This course presents theoretical frameworks and current best practices involved in the development, implementation and evaluation of Early Childhood Special Education programs. Content will include discussion of models of teaming, ethical issues, interagency coordination, transition, mentoring and supervision. Prerequisite: SPED 300 or SPED 420, SPED 412 and SPED 405.

SPED511A - Adv Inst Design & Mthds 511A-3 Advanced Instructional Design and Methodology for Students with Disabilities. Advanced study of evidence-based practices related to the development and delivery of effective educational programs for students with mild disabilities. Emphases will include instructional design, instructional strategies and techniques, include the use of technology to meet educational needs of students with mild disabilities.

SPED511B - Curr Inst Remed Lrn Disblties 511B-3 Curriculum for Instructional Remediation of Learners with Disabilities. Advanced study of curriculum and curricular approaches to meeting the educational needs of students with mild disabilities in special education and general education classrooms. Emphasis include academic and functional curriculum for basic skills and content areas, direct instruction and curriculum modifications and adaptations.

SPED512 - Advanced ECSE 512-3 Advanced Child and Family Assessment, Curriculum Methods and Evaluation in Early Childhood Special Education. This course presents advanced coursework and practical experiences in child and family assessment, selection of curricula, and evaluation in Early Childhood Special Education. Students will review current assessment and curriculum packages, conduct evaluations and write assessment reports. Practical experience will be an integral part of this course. Prerequisites: SPED 300 or 420, 405 and 412.

SPED513 - Organz, Admintrn & Superv 513-3 Organization, Administration, and Supervision in Special Education. Emphasis upon the functions, underlying principles and cautions to be observed in the organization and administration of special education. The selecting and training of teachers, problems of supervision, special equipment, transportation, cooperating agencies and legal aspects of the problem. Prerequisite: SPED 300 or SPED 420. Special approval needed from program coordinator.

SPED514 - Sim Admin Tasks in SPED 514-3 Simulation of Administrative Tasks in Special Education. Development of skills required of special education administrators and supervisors through the use of simulation materials focusing on developing administrative skills. Prerequisite: SPED 300 or 420. Special approval needed from program coordinator.

SPED515 - Collab-Based Delivery Systems 515-3 Collaboration-Based Delivery Systems in Special Education. Designed to provide students with a thorough knowledge and skill base in the collaboration process including problem-solving processes, communication skills and conflict resolution skills. Collaboration-based approaches will be examined as alternative systems and methods of meeting the educational needs of students with disabilities within a continuum of special education services.

SPED516 - Adv Assess Diverse Learners 516-3 Advanced Assessment for Diverse Learners. Develop practitioner's knowledge and skills to develop and implement standardized and informal assessment systems to guide program planning and instructional decision-making for students with disabilities in regular and special education programs. Furthermore, practitioners will identify, utilize, and implement modifications and accommodations to facilitate students' performance on informal and standardized assessment tools. Prerequisite: SPED 411 or consent of instructor.

SPED517 - System Care Exc Chld Yth 517-3 Systems of Care for Exceptional Children and Youth. Survey and examination of social agencies and models of service delivery contributing to the welfare and care of exceptional children and youth. Emphasis will be given to models, services, and organization of system of care serving youth with disabilities.

SPED518 - Workshop in Special Educ 518-1 to 6 Workshop in Special Education. Topical workshops centered on current practices and new developments in special education. Designed to promote better understanding of the psychological and educational problems of exceptional children. Open to graduate students majoring in education and related fields. Special approval needed from the instructor and department chair.

SPED519 - Career Dev Opp-Educ Handic Yth 519-3 Career Development Opportunities for Educationally Handicapped Youth. This course is designed to prepare special educators to understand the career needs of the educationally handicapped youth and the procedures for developing appropriate career services for such students. Prerequisite: SPED 430.

SPED550 - Behave Mgt Except Child Youth 550-3 Behavior Management of Exceptional Children and Youth. This course deals with assessment, implementation, and monitoring procedures involved with the use of behavior change techniques in special education programming. Emphasis will be placed on the actual implementation of behavior change techniques with school aged students with disabilities. Special approval needed from the instructor.

SPED560 - Inservice Delivery 560-2 Inservice Delivery. Covers theoretical and practical aspects of inservice delivery/staff development. Special focus on organizing inservice programs, delivery techniques, consultative skills development, select inservice models, needs assessment and evaluative techniques.

SPED578 - Legal Framework Services 578-3 Legal Framework for Special Education Services. Covers state and federal statutes and regulations including IDEA, Section 504: The Rehabilitation Act of 1973, and No Child Left Behind Act, as well as current legislation and litigation with respect to provision of educational services for children and youth/young adults with disabilities. Prerequisite: SPED 300 or SPED 420, or consent of instructor.

SPED580 - Master Sem-Issues & Trends 580-3 Master's Seminar: Issues and Trends in Special Education. Analysis of research, trends, and programs in the education of children with disabilities. Open to graduate students in special education or related field. Prerequisite: SPED 300 or 420.

SPED582 - P M Sem-Theory & Models 582-3 Post-Master's Seminar: Theories and Models in Special Education. Critical discussion of eight major intervention models used historically and currently with handicapped children in educational settings. Special approval needed from the instructor.

SPED583 - P M Sem-Prog Coordination 583-3 Post-Master's Seminar: Program Coordination in Special Education. Analysis of organizational principles and practices required for the creation and maintenance of programs to meet the needs of persons who are handicapped and require specialized educational programs within the school setting. Special approval needed from the instructor.

SPED584 - Issues in Int'l Special Educ 584-3 Issues in International Special Education. This course is designed to examine major aspects of disability theory and issues in international special and inclusive education. It provides current knowledge on disability models, as well as on special education systems world-wide; it examines historical patterns, the international human rights law and country legislation, cultural issues and intervention practices related to special education; it reviews major concepts, issues and debates in the international field of special education.

SPED585 - Doctoral Sem-Evaluation 585-3 Doctoral Seminar: Evaluation in Special Education. An analysis of the purposes, approaches, design, methodology and applications of evaluative studies in special education. Prerequisite: SPED 582, SPED 583.

SPED586 - Proseminar in Special Educ 586-1 to 4 (1,1,1,1) Proseminar in Special Education. A topical seminar providing for the systematic discussion of current research in the field of special education. Specific content is determined by participating faculty and students, relative to current faculty research and dissertations in progress within the department. Doctoral students will register for a total of four credit hours, one per semester, after which they will audit the course during the pursuit of their dissertation. Master's students admitted with special approval from the adviser and department chair.

SPED590 - Readings in SPED 590-1 to 6 Readings in Special Education. Study of a highly specific problem area in the education of exceptional children. Open only to graduate students. Graded S/U only. Prerequisite: SPED 300 or 420. Special approval needed from the instructor.

SPED591 - Independent Investigation 591-1 to 6 Independent Investigation. A field study for graduate students. Conducted in a school system where full cooperation is extended. The study will involve selection of a problem, surveying pertinent literature, development of experimental design and procedures, recording results and appropriate interpretations and summaries. Special approval needed from the instructor.

SPED594A - Practicum SPED Behav Intervntn 594A-1 to 6 Practicum in Special Education-Behavior Interventions. A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification.

SPED594B - Practicum SPED Curr Adaptation 594B-1 to 6 Practicum in Special Education-Curriculum Adaptation. A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification.

SPED594C - Practicum SPED-Mltip Disblties 594C-1 to 6 Practicum in Special Education-Multiple Disabilities. A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification.

SPED594D - Practicum SPED-Early Child 594D-1 to 6 Practicum in Special Education-Early Childhood Special Education. A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification.

SPED594E - Practicum SPED-Supervision 594E-1 to 6 Practicum in Special Education-Supervision. A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification.

SPED595A - Intern-Res & Applied Studies 595A-1 to 12 (1 to 6) Internship-Research and Applied Studies. The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors.

SPED595B - Internship-Evaluation 595B-1 to 12 (1 to 6) Internship-Evaluation. The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors.

SPED595C - Internship-Administration 595C-1 to 12 (1 to 6) Internship-Administration. The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors.

SPED595D - Internship-Univ Teaching 595D-1 to 12 (1 to 6) Internship-University Teaching. The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors.

SPED595E - Intern-Prog Plan & Mgt 595E-1 to 12 (1 to 6) Internship-Program Planning and Management. The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors.

SPED595F - Internship-Supervision 595F-1 to 12 (1 to 6) Internship-Supervision. The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors.

SPED595G - Intern-Spec Delivery Systems 595G-1 to 12 (1 to 6) Internship-Specialized Delivery Systems. The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors.

SPED599A - Thesis 599A-1 to 6 Thesis. Independent hours to be taken under the supervision of the student's Master's degree chair for the purpose of conducting and writing the Master's thesis. Graded S/U only. Special approval needed from the instructor.

SPED599B - Research Paper 599B-1 to 6 Research Paper. Independent hours to be taken under the supervision of the student's Master degree chair for the purpose of conducting and writing the Master's research paper. Graded S/U only. Special approval needed from the instructor.

SPED600 - Dissertation 600-1 to 32 (1 to 12 per semester) Dissertation. Special approval needed from the chair.

SPED601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

SPED699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Special Education Faculty

Anastasiou, Dimitris, Associate Professor, Ph.D., National and Kapodistrian University of Athens, 2004.

Bates, Paul, Professor, Emeritus, Ph.D., University of Wisconsin, 1978.

Bruns, Deborah, Professor, Ph.D., University of Illinois at Urbana-Champaign, 2000.

Crowner, James, Professor, Emeritus, Ph.D., Michigan State University, 1960.

Ewing, Norma J., Associate Professor, Emerita, Ph.D., Southern Illinois University, 1974.

Hisama, Toshiaki, Associate Professor, Emeritus, Ph.D., University of Oregon, 1971.

Juul, Kristen D., Professor, Emeritus, Ed.D., Wayne State University, 1953.

May, Michael E., Associate Professor, Ph.D., Vanderbilt University, 2007.

Miller, Sidney R., Professor, Emeritus, Ph.D., Pennsylvania State University, 1974.

Mundschenk, Nancy, Associate Professor, Ph.D., University of Iowa, 1992.

Teacher Education Program

It is advised that students seeking teacher licensure complete University Core Curriculum requirements and general education requirements (Education Core Courses) prior to beginning courses involving specialization. For more information about IBSE and licensure requirements, please consult www.isbe.net.

In addition to general University and College of Education and Human Services requirements, students must meet all requirements prerequisite to student teaching.

SIU students seeking Illinois teacher licensure must apply for licensure through the College of Education and Human Services Office of Teacher Education and must meet licensure requirements in effect at the time of their graduation. Licensure requirements are determined by the Illinois State Board of Education and are subject to change. Teacher licensure candidates are urged to consult the current SIU Carbondale Undergraduate Catalog and materials published by the SIU College of Education and Human Services Office of Teacher Education for updates to Illinois teacher licensure requirements.

Course Fees

Some courses have fees attached to their registration. These fees cover such items as laboratory fees, field trips, printing of materials, and supplies. These fees are published in the class schedule but are subject to change. For the correct fee, contact the department that offers the class or the Registrar's Office.

Teacher Education Program Curriculum

All initial teaching licensure programs at Southern Illinois University Carbondale are fully accredited by the National Council for Accreditation of Teacher Education (NCATE) and by the Illinois State Board

of Education. Spanning the entire University, the Teacher Education Program is administered through the College of Education and Human Services and includes majors from the College of Education and Human Services, the College of Science, the College of Liberal Arts, and the College of Agricultural Sciences. Teacher education programs approved by the Illinois State Educator Preparation and Licensure Board are offered at the undergraduate level in early childhood education, elementary education, special education, secondary education, and in majors that lead to the special license to teach K-12 art, music, physical education, and foreign languages. The Unit Accrediting Coordinating Council (UACC), composed of program coordinators for all campus-wide undergraduate and graduate majors with teacher licensure, and the Advisory Board for Teacher Education (ABTE), composed of faculty, area teachers, administrators, Regional Office of Education and a member of the Illinois Board of Education, serve in an advisory capacity on policy matters related to teacher education.

Only those teacher candidates who complete an approved Teacher Education Program earn entitlement for initial teacher licensure.

Admission Policy

The College of Education and Human Services admission policy shall be the same as that of the University. All qualified new students are admitted to the College of Education and Human Services with a specific major or as an undecided student. The same policy applies for reentering students and for teacher candidates enrolled in Teacher Education Program majors in other colleges in the University. Admission to the College of Education and Human Services does not guarantee admission to the Teacher Education Program. ALL teacher candidates seeking state teacher licensure must first be admitted to the Teacher Education Program. Specific requirements for admission are listed below. Application information is available in Wham 135 or online at: ehs.siu.edu/tep/.

Teacher candidates are admitted two times a year to the Teacher Education Program. Deadlines for completed applications are January 10 or previous business day for spring semester admission, and August 15 or previous business day for fall admission into the TEP. Completed applications will be accepted in the Office of Teacher Education, Wham Education Building, Room 135 after the following criteria are met:

1. When candidate is ready to begin four continuous clinical experiences;
2. An overall grade point average of at least 2.75 (4.0 scale);
3. An unofficial transcript documenting completion of ENGL 101, ENGL 102 with a grade of "C" or better;
4. Qualifying results for Test of Academic Proficiency (TAP) or other ISBE accepted entry test;.
5. Approval by major department if required;
6. Students are encouraged to declare a particular teaching field early in their undergraduate careers by contacting their advisor or the department in which they wish to specialize. Transfer students are encouraged to contact academic advisors in the College of Education and Human Services, at least one semester prior to enrolling at Southern Illinois University Carbondale.

Retention Policy for Teacher Education Policy

This retention policy applies to all students enrolled at Southern Illinois University Carbondale after June 15, 2001.

Provisions for enrollment in EDUC 301 (first clinical practice in the schools):

1. Teacher candidates who wish to change majors after being admitted to the Teacher Education Program and prior to taking EDUC 301, must reapply under the new major and be admitted in the new major before they can enroll in EDUC 301. Teacher candidates who change their major after enrolling in EDUC 301 may be required to take additional hours of clinical practice to meet the required clinical hours in their major.
2. Teacher candidates may not enroll in EDUC 301 more than two times. After two failures, teacher candidates must demonstrate through external experiences with children/youth of the age they plan to teach that they have the potential for a successful third placement. This will require at least one semester of external experience and written documentation from the administrator of the school and from the person who provided direct supervision.

In order to remain in the program and complete the requirements for graduation and for licensure, teacher candidates must maintain a 2.75 grade point average in the major and receive departmental approval of the candidate's Gateway Portfolio. This requirement must be met before final clearance can be given for student teaching. All teacher candidates must pass their Illinois content area test prior to beginning their student teaching.

Dispositions in Teacher Education

A candidate must have good character, sound mental and physical health, and must demonstrate the skills, dispositions and behaviors necessary for working with children and/or adolescents, as applicable.

Dispositions adopted by the College of Education and Human Services' Teacher Education Program are:

- **Professionalism:** dependability and reliability; honesty, trustworthiness, ethics; enthusiasm, love of learning and commitment to the profession.
- **Valuing human diversity:** showing respect and sensitivity to the learning needs and abilities of all individuals, and to their diverse cultures, languages, races, and family compositions; striving for best practices to address the diverse learning needs and abilities of all individuals and to address their diverse cultures, languages, races, and family compositions; and collaboration with diverse peers, professional colleagues, staff and families.
- **Professional development:** ongoing acquisition of knowledge; development of research-based practices; assessment of one's own performance and reflection on needed improvements.

Upon admission to the Teacher Education Program, candidates are informed of the dispositions expected of SIU's teacher education candidates in a group session. The teacher candidates are then formally assessed regarding their professional dispositions as part of all clinical practice in the schools and during program coursework. In addition, at any time during the program, a faculty member or cooperating teacher may identify a teacher candidate who is experiencing difficulty regarding the development of desired dispositions and complete a unit dispositions form that is forwarded to the coordinator of that teacher candidate's program major. The program reviews any difficulties and develops an action plan with the candidate to address them. A candidate who does not make progress toward ameliorating the difficulties in professional dispositions discusses a remediation plan with benchmarks for improvement with their program coordinator. Teacher candidates who do not make adequate progress in the remediation plan may be dropped from the program.

Collegiate Warning and Dismissal from the Teacher Education Program.

The Teacher Education Program expects and requires adequate progress of all its teacher candidates throughout the program. Once admitted, candidates will be monitored for applications of learning in their clinical practice. The Teacher Education Program defines performance in each clinical practice aligned to the Illinois Professional Teaching Standards, in a rubric with defined behaviors and skills. The rubric is specific and detailed, designed to guide candidates and clinical supervisors in fair, consistent assessment of performance. This rubric is presented to candidates at the beginning of their clinical practice.

At any time during their Professional Education Sequence, field supervisors (Cooperating Teacher, Clinical Supervisor, or School Administrator) may determine that the teacher candidate is at risk of not meeting the defined performance standards. The supervisor will forward evidence of "Inadequate Progress" to the Director of Teacher Education, who will, in turn, forward the evidence to the Program Coordinator. Each Program has on file in the Dean's Office a formal plan of remediation for its candidates. The Program Faculty, in consultation with the Office of Teacher Education, may decide what level of consequence to implement.

The ultimate responsibility for retention of a candidate in the Teacher Education Professional Education Sequence belongs to the Director of Teacher Education.

Teacher candidates who are on collegiate warning and do not earn a 2.75 grade point average in courses required by their major in a subsequent semester will be placed in a status of collegiate dismissal. Teacher candidates registered in other colleges who are in the Teacher Education Program who do not meet this requirement may be dismissed from the Teacher Education Program. A teacher candidate who has been placed on collegiate dismissal may seek transfer to another program if the teacher candidate has an overall grade point average of 2.00 at Southern Illinois University Carbondale. Teacher candidates who are placed on collegiate dismissal and have less than an overall 2.00 for work completed at the

University but have not been suspended from the University will be counseled regarding other possible majors.

Teacher Education Program Degree Requirements

Each degree candidate in a Teacher Education Program (see exceptions below) must complete the requirements listed below:

1. All requirements of the student's major.
2. The University Core Curriculum.
3. EDUC 211, EDUC 214, EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, EDUC 401A, in the professional education sequence (with a grade of C or better).
4. ENGL 101 and ENGL 102 with a grade of C or better. (The two composition courses are a prerequisite for admission).
5. Teacher candidates must receive a grade of C or better in all courses in one's major and endorsement area(s) to receive entitlement for teacher licensure.
6. CI 360 is required of all secondary teacher candidates unless otherwise specified in the major.

Professional Education Sequence

Degree Requirements	Credit Hours
Depending on major	30-32
Basic Professional Preparation: EDUC 211; EDUC 214; EDUC 313; EDUC 319; EDUC 308	3
Total	15
Courses with Clinical Practice EDUC 301; EDUC 302; EDUC 303	1
EDUC 400 (SPED only)	6
Professional Semester of Student Teaching EDUC 401A	12
Total	15-20
An undergraduate major in special education completes EDUC 400 in lieu of EDUC 308 and EDUC 303.	

Student Teaching

Student teaching constitutes a total professional commitment on the part of the teacher candidate and is a full semester of clinical practice in the public school classroom carrying 12 hours of credit. Enrolling in coursework during student teaching is strongly discouraged. Teacher candidates must have a 3.0 grade point average or better and special permission of the Office of Teacher Education to enroll in an extra course during student teaching.

The student teacher must follow the same daily schedule as the cooperating teacher with whom the teacher candidate is placed. This means that the student teacher remains in the school for the entire

day, and participates in whatever extracurricular activities might be the responsibility of the cooperating teacher.

Teacher candidates majoring in elementary education will be assigned to work with a cooperating teacher in one of the elementary grades in an affiliated school. Teacher candidates majoring in early childhood will be assigned to work with a cooperating teacher in a preschool/kindergarten or primary grade in an affiliated school. Teacher candidates are expected to teach all subject areas taught within the specific major.

Teacher candidates who major in a secondary school subject which has an approved program in the Teacher Education Program will be assigned to work with a cooperating teacher in a secondary school, grades nine through twelve, whose teaching assignment is consistent with the teacher candidate's teaching major.

Special education majors will be assigned to work with a cooperating teacher in a cross-categorical area in order to receive LBS I licensure.

Teacher candidates who wish to enroll in the student teaching professional semester must file an application with the Office of Teacher Education in the College of Education and Human Services, Wham Building, Room 135, at least one semester in advance of the semester during which they wish an assignment. Teacher candidates who wish to student teach in the Belleville or Chicago suburban schools must request such placement considerations one year in advance. Student teaching is limited to the schools approved by the Office of Teacher Education as partnership schools.

Placement of Student Teachers

Student teaching under the supervision of Southern Illinois University Carbondale faculty is conducted in teaching centers with affiliated schools located in southern Illinois as well as specific locations in Belleville and suburban Chicago. Off-campus programs in Elementary Education and Special Education may be available at the Rend Lake College Marketplace, or University College of Lake County. A current listing of specific schools to which student teachers may be assigned is available on the College of Education and Human Services Teacher Education website. Cooperating teachers for student teachers must be highly qualified in their grade level and subject area, have prior experience with clinical practice teacher candidates, be recommended by building administrator for effective mentoring and instructional coaching capabilities, and have earned a rating of proficient or higher on their latest evaluation.

Teacher candidates will be assigned to one of the SIU clinical sites. To help ensure an unbiased performance and evaluation, student teachers will not be placed in a school in which they have worked or family members currently work. Although every consideration is made to place student teachers within 45 minutes of their home, no guarantees of a close placement can be made. Student teachers are responsible for their own transportation to and from student teaching sites.

Student Teaching Prerequisites

1. Teacher candidates must have submitted a completed student teaching application form.
2. The teacher candidate is responsible for having all transcripts of credit earned at colleges or universities other than Southern Illinois University Carbondale submitted to the university prior to the first day of the semester for which the teacher candidate is applying.
3. The teacher candidate must have completed all clinical practices with a C or better.
4. The teacher candidate must have a minimum cumulative average of 2.75 in the major before beginning work in student teaching.
5. All courses in the major, as well as the professional education sequence, must have been completed with a grade of C or better.
6. The teacher candidate must have completed with a C or better all methods class(s) required for the major prior to the professional student teaching semester, as well as in all EDUC courses and courses in one's major and endorsement area(s). No incompletes will be accepted prior to student teaching.
7. Teacher candidates must pass their respective Illinois content test before being permitted to student teach.

8. Every student teacher must have a health clearance performed by the Health Center or by their own medical doctor. A record of the health clearance must be on file in the Office of Teacher Education.

Majors to Prepare for Secondary School Teaching

Teacher candidates who elect to pursue a Bachelor of Science degree in the College of Education and Human Services, College of Agricultural Sciences, College of Liberal Arts, or College of Science in order to teach in secondary schools should select academic majors from the areas included in the list below. Included are those areas for which Southern Illinois University Carbondale has approval from the Illinois State Board of Education and from the Illinois State Educator Preparation and Licensure Board.

TEACHING AREA

Agriculture

Biological Sciences

English Education

Foreign Languages

History Education

Mathematics Education

Workforce Education and Development

Business Education

Family and Consumer Sciences

Technology Education

Health Careers

Licensure

The Office of Teacher Education will verify that the candidate has:

1. Their degree awarded and posted to their official SIU transcript;
2. Passing scores posted to their ELIS account on the Test of Academic Proficiency (TAP 400) or equivalent test, the applicable content test, and edTPA; and
3. Completion of all requirements of the approved Illinois educator preparation program for the type of endorsement sought.

The Office of Teacher Education then notifies ISBE via Educator Licensure Information System (ELIS) that the candidate has completed all program requirements and enters the entitlement. A badge appears on the home screen of the candidate's personal ELIS account. The candidate may then click the badge to submit an application and fee in order to claim their teaching license.

Teacher Education Program Courses

EDUC211 - Diversity in Education 211-3 Diversity in Education. (Advanced University Core Curriculum course) Education 211 is one of the foundational courses required in the Teacher Education Program (TEP). The course fulfills the minimum state licensure requirement for diversity in education and Standard 1 of the IPTS. The course introduces students to the philosophical and definitional issues related to pluralistic education. Course focus addresses philosophical positions, the design and implementation of effective teaching strategies that reflect ethnic and cultural diversity, and prepares students to function in a multicultural society.

EDUC214 - Human Development & Learning 214-3 Human Development & Learning. (Advanced University Core Curriculum course) A requirement in the professional education sequence. This course examines human behavior as individuals and in groups throughout the life-span. It includes human development within the social context, social science research strategies, individual differences, group dynamics, and principles of learning.

EDUC301 - Reflective Instr Prac 301-1 Clinical I, Reflective Instructional Practices. Reflective Instructional Practices is the first clinical field experience course in the TEP for all majors seeking

licensure and is taken concurrently with EDUC 313. This field experience consists of five sessions of instruction in using technology for student engagement and reflective teaching, in addition to clinical placement in public school classrooms where candidates will apply knowledge and skills presented in EDUC 313. Concurrent enrollment in EDUC 313. Restriction: Admittance to the Teacher Education Program.

EDUC302 - Methods Instr 302-1 Clinical II, Methods of Instructional Practices. Clinical II, Methods of Instructional Practices, is the second clinical field experience course in the TEP for all majors seeking licensure. This course is taken concurrently with methods courses within the candidate's major. This field experience consists of five sessions of advanced technology use for student engagement and reflective teaching, in addition to clinical placement in public school classrooms where candidates will apply content and pedagogical knowledge and skills presented in content method courses. Prerequisites: EDUC 301 and EDUC 313 with a grade of C or above. Concurrent enrollment in EDUC 319.

EDUC303 - Advanced Methods Instr 303-1 Clinical III, Advanced Instructional Practices. Clinical III, Advanced Instructional Practices, is the third clinical field experience course in the TEP for majors seeking licensure. This course is taken concurrently with methods courses within the candidate's major. This field experience consists of five sessions of practical legal issues for educators in addition to clinical placement in public school classrooms where candidates will apply content and pedagogical knowledge and skills presented in content method courses. Prerequisite: EDUC 302 and EDUC 319 with a minimum grade of C or above. Concurrent enrollment in EDUC 308.

EDUC304 - Clinical IV ESL 304-3 Clinical IV-English as a Second Language Field Placement. Clinical IV-English as a Second Language Field Placement, is the clinical field experience course in the TEP for candidates in ESL classrooms. This field experience consists of 16 weeks of clinical placement in the public school classrooms (128 hours), where candidates will apply knowledge and skills learned in methods courses.

EDUC308 - C & M Teach Exceptional Child 308-3 Characteristics and Methods for Teaching Exceptional Children. (Same as SPED 408) For pre-service teachers who serve children and youth with disabilities. The course focuses on essential disability characteristics, data-based decision making, scientifically-based academic and behavioral interventions and strategies to differentiate instruction and accommodate learners with disabilities in general education classrooms. Co-requisite: EDUC 303.

EDUC312 - Observation Hours 312-1 to 8 Field Observation and Participation. Allows the pre-service teacher candidate to observe and participate in activities and experiences related to their major. Field experiences are correlated with courses in the student's major department. Enrollment is coordinated by the student's major department and placement in public school settings is coordinated by the Office of Teacher Education. Prerequisite: EDUC 313 or concurrent enrollment, or permission from instructor or the Director of Teacher Education.

EDUC313 - Planning & Management 313-3 Reflective Classroom Planning, Organization, and Management. This course prepares teacher candidates to analyze and use student academic and behavioral data to design instruction that meets the diverse needs of students, and leads to ongoing growth and achievement. The candidates will develop an understanding of principles and techniques of evidence-based instructional practices that enable active student engagement and effective management of classrooms and student behavior. Concurrent enrollment with EDUC 301. Restriction: Admittance to the Teacher Education Program.

EDUC319 - Language and Learning 319-3 Language, Culture, and Learning. This course introduces first and second language development and acquisition, language variation, cultural diversity, bilingual education, and culturally and linguistically responsive instruction. The course will serve as a foundation for methods courses in the teacher education program where teacher candidates will learn best practices to teach ELLs (English language learners), dialect speakers, and other students from diverse cultural and linguistic backgrounds. Prerequisite: EDUC 313 and EDUC 301 with a grade of C or above. Concurrent enrollment in EDUC 302.

EDUC350 - Culture in the Classroom 350-3 Culture in the Classroom. Students will develop competencies and skills needed by educational professionals for work with children and their families

from diverse cultural and linguistic backgrounds. This course will examine many social, political, and cultural factors that affect learning and teaching. (online course)

EDUC351 - Foundations Bilingual Educ 351-3 Foundations of Bilingual Education. Students will develop competencies and skills needed by educational professionals for work with children and their families from diverse cultural and linguistic backgrounds in school settings. Students will be presented with a developmental overview of the historical, philosophical, socio-cultural, and legislative foundations of bilingual education in the United States. (online course)

EDUC352 - Linguistics ESL Teacher 352-3 Linguistics for the ESL Teacher. Students will develop competencies and skills needed by educational professionals for work with children and their families from diverse cultural and linguistic backgrounds. Educational Linguistics as it relates to this course focuses on training and research in linguistics as it relates to educational theory and practice, specifically the teaching and learning of preschool-3rd grade ELL students. (online course)

EDUC353 - Assessment Bilingual Students 353-3 Assessment of Bilingual Students. Students will develop competencies and skills needed by educational professionals for work with children and their families from diverse cultural and linguistic backgrounds. Students will examine instruments, strategies, and techniques related to assessment and placement of ELL students. (online course)

EDUC354 - Bilingual & ESL Methods 354-3 Bilingual and ESL Methods and Materials. Students will develop competencies and skills needed by educational professionals for work with children and their families from diverse cultural and linguistic backgrounds. This course will focus on bilingual and ELL curriculum development and instruction for bilingual and ELL students (preschool-3rd grade) in a variety of language and program settings. (online course)

EDUC400 - SPED Clinical Field Exp 400-6 Clinical Field Experience III-Special Education. This clinical field experience is limited to Special Education majors. Concurrent enrollment in SPED 417 and SPED 419 is required. This field experience consists of five sessions of practical legal issues for educators in addition to clinical placement in public school classrooms, where candidates will apply content and pedagogical knowledge and skills presented in content method courses. Placement in public school settings is coordinated by the Office of Teacher Education. Prerequisite: EDUC 302 and EDUC 319 with minimum grades of C.

EDUC401A - Student Teaching 401A-12 Clinical Practice/Student Teaching. A requirement in the undergraduate professional education sequence necessary for initial teacher licensure by entitlement. For undergraduate credit only. Prerequisite: successful completion of prior professional education sequence courses and all required methods courses with a grade of C or better, required major GPA, special approval needed from the department, full semester of clinical practice/student teaching and all required seminars, and required licensure tests. Laboratory Fee: \$100.

EDUC401C - Student Teaching 401C-3 Clinical Practice/Student Teaching. Clinical field experience for teacher candidates who need an additional student teaching placement in order to pass the edTPA. This course is also appropriate for candidates who need an intensive but limited field experience. Laboratory fee: \$25.

EDUC500 - Clinical Exp in Teaching 500-1-12 Clinical Experiences in Teaching. Clinical field experiences or apprenticeship conducted in a public school setting for graduate students. Supervision provided by Cooperating Teacher and University Supervisor. Restricted to admission to graduate programs. Special approval needed from the advisor.

EDUC501 - Graduate Student Teaching 501-1 to 12 Graduate Student Teaching. A requirement for the Master of Arts in Teaching and Alternative Route to Teacher Certification programs. The student teaching experience is necessary for certification by entitlement. Restricted to admission to the M.A.T. or alternative route to teacher certification programs. Lab fee: \$100.

EDUC505 - Intro Quantitative Res in Educ 505-3 Introduction to Quantitative Research in Education. This course is required of all students enrolled in the doctoral program of the College of Education and Human Services. It offers an introduction to the reading of quantitative research literature and

the development of quantitative research methods in Education that can be used to address areas of scholarly inquiry within the academic concentrations found in the College.

EDUC510 - Intro to Doctoral Studies 510-3 Introduction to Doctoral Studies in Education. This seminar is required of all new students enrolled in the Ph.D. program in Education, to be taken at or near the beginning of their studies. The seminar serves as an introduction to doctoral studies and doctoral-level scholarship in Education. It will emphasize each student's development as a critically reflective scholar and address the attitudes, assumptions and practices that underlie scholarly inquiry in the Education field.

EDUC511 - Sem in Phil & Cult Found 511-3 Doctoral Seminar in Philosophical and Cultural Foundations of Education. This seminar is one of two course options required for all students pursuing a doctoral program degree in the College of Education and Human Services. The primary objectives are to aid in the development of the Doctoral student's own nature and reflective theory of education; to help students pursue their scholarly activities in relation to the whole field of education; and to make the student aware of the resources of scholarship in other disciplines which might be said to be foundational to education. Restricted to admission to the Ph.D. program in education.

EDUC512 - Sem in Beh & Cogni Found 512-3 Doctoral Seminar in Behavioral and Cognitive Foundations of Education. This seminar is one of two course options for all students pursuing a doctoral degree in Education. The seminar focuses on the critical examination of the psychological basis of pedagogical theory; a review of behavior, cognitive and motivational theories; and a preliminary assessment of empirical research related to psychology of instruction. Restricted to admission to the Ph.D. program in education.

EDUC550 - Experimental Education 550-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Special approval needed from the instructor.

EDUC550C - Rec Research Seminar 550C-3 Rec Research Seminar.

Teacher Education Program Faculty

Collins, Tanya L., Instructor, M.S., University of Memphis, 1998.
Cox, Jacki L., Lecturer, Ph.D., Southern Illinois University, 2000.
Garrett, Ann M., Senior Lecturer, M.Ed., Southern Illinois University, 1975.
Marjanovich, Angel F., Instructor, M.S., Southern Illinois University, 2016.
Mundschenk, Nancy, Director of Teacher Education, Ph.D., University of Iowa, 1992.
Nobel, JoVonna, Instructor, M.S., Southern Illinois University, 1986.
Pultorak, Edward, Jr., Ph.D., Indiana State University, 1988.
Smith, Sue, Instructor, M.S., Southern Illinois University, 2005.
Speith, Gerald, Clinical Instructor, M.S., Southern Illinois University, 1977.
Teske, April, Assessment Coordinator, M.S., Southern Illinois University, 2005.
Turl, Vicky L., Instructor, M.S., Southern Illinois University, 1990.

Theater

The Department of Theater is an accredited institutional member of the National Association of Schools of Theatre, 11250 Roger Bacon Drive, Suite 21, Reston, VA 20190.

The Bachelor of Arts degree in Theater is designed to provide the student with broad-based exposure to human experience and sound foundation in basic skills of theater craft. The undergraduate theater major provides the student with invaluable interpersonal and intrapersonal skills and builds inquiring and open minds—qualities required in most professions the student might wish to pursue after graduation—and further offers essential education and training for continued work in graduate or professional schools.

Courses in acting, voice, movement, directing, theater history, dramatic literature, playwriting, production design, and technical theater, are augmented by the extensive production schedule in two theaters—

a proscenium house, the McLeod Theater, seating about 499, and the Christian H. Moe Laboratory Theater, a flexible space seating 100—providing training in all aspects of theater. The production schedule is extensive enough to allow students the opportunity to design sets, lights, and costumes and to write, perform, and direct for productions bridging all dramatic genres, including musical theater.

In addition to the University Core Curriculum requirements, all theater majors must complete a theater core curriculum of 27 semester hours, each of which must be completed with a grade of C or better; a liberal arts component of 20 hours, selected by advisement from courses outside the Department of Theater; and 32 hours of theater electives, to include at least nine hours at the 400 level. These 32 hours may include a minor of 15 hours in such complementary fields as art, fashion design and merchandising, computer science, English, foreign languages, history, journalism, music, dance, philosophy, psychology, recreation, sociology, and communication studies. Theater students must complete all major coursework with a cumulative 2.0 GPA.

Theater course credit earned at other institutions of higher learning, not used for University Core Curriculum requirements at the time of transfer, can be applied to the Bachelor of Arts degree program with the approval of the faculty of the Department of Theater.

Bachelor of Arts Degree in Theater, College of Liberal Arts

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Must include THEA 220 as substitute for THEA 101	
College of Liberal Arts Component (by advisement)	20
Requirements for Major in Theater	61
Theater Core Curriculum	27
THEA 205, THEA 218A, THEA 218B or C, THEA 217, THEA 300, THEA 311A, THEA 354A and B, THEA 402 or THEA 401A and B, THEA 420, THEA 421.	
Theater Electives (minimum of nine semester hours at the 400 level)	34
Total	120
Students must have a total of 42 semester hours at the 300-400 level from a four year institution(s).	

Bachelor of Fine Arts in Musical Theater Degree, College of Liberal Arts

Co-sponsored by the Department of Theater and the School of Music, the BFA in Musical Theater is a professional degree program designed to prepare students for a career in musical theater performance. All students must audition to enter the program. Toward the end of their 3rd semester, BFA candidates must pass a jury of singing, acting and dance, along with a review of their efforts to date in order to continue in the program. The degree requires 120 credit hours for graduation, 79 of which must be in music, theater and dance. Those students not passing their jury will receive advisement as to other

options in music and theater. In addition to their coursework, BFA Musical Theater students are required to audition for all musicals and plays, and attend the pre-determined number of plays and concerts. BFA MT students are waived from the College of Liberal Arts foreign language requirements and from mandatory music ensemble participation required each semester of applied study. BFA MT students are required to meet only 2 semesters of ensemble requirement.

Bachelor of Fine Arts in Musical Theater Degree

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Including THEA 220 and Theater Insight as UCC substitutes. MUS 203, Diversity and Popular Music in American Culture is a recommended course for the multicultural requirement.	
Requirements in Music	27
To include MUS 366E-F, MUS 030 A,B, MUS 104A Aural Skills, MUS 105A Basic Harmony, MUS 140X, MUS 240X, MUS 340X, MUS 440X, MUS 402, MUS 471, MUS 489	
Requirements in Theater	34
To include THEA 203B, THEA 205, THEA 217, THEA 220, THEA 300, THEA 303A, THEA 403A, or THEA 417; THEA 303B, THEA 311A, THEA 317A, THEA 317B, THEA 322, THEA 354A, THEA 400, THEA 424	
Requirements in Dance	14
THEA 103A, B, C, D Dance (2+2+2)	8
THEA 323 or THEA 423 Musical Theater Dance	(6)
Approved Performance Electives	6
which may include THEA 402 - Directing, MUS 401 - Opera Workshop, MUS 403 - Lyric Theater Ensemble	
Total	120

Theater Minor

Requirements for Minor in Theater equals 16. A minor in theater consists of THEA 311A, THEA 101 as a prerequisite, THEA 354A or B, THEA 218A,B or C, THEA 217 and THEA 300.

Theater Courses

THEA101 - Theater Insight 101-3 Theater Insight. (University Core Curriculum) [IAI Course: F1 907] Through lectures, discussions, projects, text readings and written critiques, students examine how plays are written and produced and how these plays reflect the people and cultures that produce them. Theater Insight Fee: \$13.

THEA103A - Beginning Ballet e103A-2 Beginning Ballet. Training in the vocabulary, traditions and techniques necessary for a strong foundation in ballet, especially as it relates to dance for the musical theater stage. Instructor approval required.

THEA103B - Beginning Tap Dance 103B-2 Beginning Tap Dance. Training in the vocabulary, history, traditions and techniques necessary for a strong foundation in tap dancing especially as it relates to dance for the musical theater stage. Instructor approval required.

THEA103C - Beginning Jazz Dance 103C-2 Beginning Jazz Dance. Training in the vocabulary, traditions and techniques necessary for a strong foundation in jazz dance especially as it relates to dance for the musical theater stage. Instructor approval required.

THEA103D - Beginning Modern Dance 103D-2 Beginning Modern Dance. Training in the vocabulary, traditions and techniques necessary for a strong foundation in modern dance especially as it relates to dance for the musical theater stage. Instructor approval required.

THEA203A - Intro to Voice & Movement 203A-3 Introduction to Voice and Movement. Fundamentals of vocal production and movement for the stage. Including breathing, kinesthetic awareness, vocal placement and resonance; physical storytelling.

THEA203B - Stage Speech and the IPA 203B-3 Stage Speech and The IPA. Fundamental use of the International Phonetic Alphabet as it pertains to standard stage speech.

THEA205 - Stage Make-Up 205-2 Stage Make-up. General survey covering design and application of makeup for the stage, including youth, middle and old age, texture, color, special effects, wigs and latex. \$10 lab fee required.

THEA217 - Acting 217-3 Acting. Preparing the actor's instrument through basic acting technique; concentration/relaxation exercises; improvisations. The course objective is the discovery and development of the actor's inner resources. Contemporary American plays are studied from the actor's point of view.

THEA218A - Beginning Stagecraft-Scenery 218A-3 Beginning Stagecraft-Scenery. [IAI Course: TA 911] Fundamentals of scenic construction and state rigging, including basic tools and equipment. Each class has a practical laboratory requirement of 45 hours. \$20 lab fee required.

THEA218B - Beginning Stagecraft-Lighting 218B-3 Beginning Stagecraft-Lighting. Fundamentals of stage lighting including instrument handling, focusing, basic electrical theory. Each class has a practical laboratory requirement of 45 hours. \$20 lab fee required.

THEA218C - Beginning Stagecraft-Costumes 218C-3 Beginning Stagecraft-Costumes. Fundamentals of stage costume construction. Each class has a practical laboratory requirement of 45 hours. \$20 lab fee required.

THEA220 - Freshman Theater Seminar 220-3 Freshman Theater Seminar. (Advanced University Core Curriculum course) Through lectures, discussions, projects, text readings and written critiques, students examine how plays are written and produced and how these plays reflect the people and cultures that produce them. Students are exposed to information skills and strategies necessary to succeed in the Department's academic and production programs. Strong focus on American plays and practice. Satisfies University Core Curriculum Fine Arts requirement in lieu of 101.

THEA260 - Internship 260-1 to 15 Internship. Outside departmental internship, which is, related to the major program but not part of a regular instructional course. Written reports are required of student and outside supervisor. Mandatory Pass/Fail. Special approval needed from the instructor.

THEA300 - Practicum 300-1 to 4 (1 per semester) Practicum. Offers students an opportunity to increase their skills in stagecraft, stage lighting, and costumes by working on department productions. Prerequisites: THEA 220, THEA 217 with grades of C or better.

THEA303A - Movement for the Actor 303A-3 Movement for the Actor. Intermediate studies in stage movement. Prerequisite: THEA 203A and 217.

THEA303B - Voice for the Actor 303B-3 Voice for the Actor. Intermediate studies in stage voice, IPA, standard speech, text analysis, scansion, cold readings. Prerequisite: THEA 203A and THEA 203B.

THEA311A - Play Analysis 311A-3 Play Analysis. Development of basic skills in play analysis and application of these skills to a variety of dramatic forms through class discussions and written assignments. Satisfies CoLA Writing-Across-the-Curriculum requirement for Theater majors. Prerequisite: THEA 101 or THEA 220.

THEA311C - Fundamentals of Writing 311C-3 Fundamentals of Writing for the Stage and Screen. This course introduces basic writing skills for playwrights, scriptwriters, and performance artists. It focuses on techniques-such as plot structure, dialogue, and the manipulation of images-used in all dramatic media. Written exercises are submitted and discussed weekly to identify dramatic events and techniques. For final projects, students write a script for either a 10-minute play, 10-minute film, or a 10-minute solo performance. Prerequisite: THEA 311A.

THEA317A - Intermediate Acting 317A-3 Intermediate Acting. The study and application of Stanislavskian-based technique to the acting process. Coursework includes scene and monologue work. Prerequisite: THEA 203, THEA 217, THEA 303A, THEA 303B.

THEA317B - Intermediate Acting 317B-3 Intermediate Acting. The study and application of European realism in the development of the actor's process. Prerequisite: THEA 317A.

THEA322 - SIUC Summer Theater 322-1 to 12 SIUC Summer Theater. Practical experience in summer stock play production. A maximum of twelve credit hours may be accumulated for performance or technical work in SIU Summer Theater only. Special approval needed from the instructor.

THEA323 - Musical Theater Dance I 323-1 to 3 (1 per semester) Musical Theater Dance I. Developing and performing musical theater choreography using intermediate jazz, tap, ballet, social and modern dance skills. Prerequisites: THEA 103A, THEA 103B, THEA 103C and THEA 103D with grades of C or better.

THEA354A - History of the Theater 354A-3 History of the Theater. (Same as CLAS 354A) Theater history from the ancient Greek and Roman periods to the 17th century.

THEA354B - History of the Theater 354B-3 History of the Theater. Theater history from the 17th century to the present.

THEA390 - Independent Study 390-1 to 6 Independent Study. Independent work on selected problems in academic or blend of academic and creative research. A maximum of three hours may be taken for a single project and a cumulative maximum of six hours may count toward the degree. Special approval needed from the instructor.

THEA400 - Production 400-1 to 6 (1 to 2 per semester) Production. Practicum for support of major department productions in all areas. Roles in department productions may fulfill requirement.

THEA401A - Stage Management 401A-2 Stage Management. Study of the theories and skills required to successfully stage manage a theater production. Prerequisite: THEA 217, THEA 218A, concurrent enrollment in THEA 401B.

THEA401B - Stage Management Lab 401B-1 Stage Management Lab. Practical application of the theories and skills learned in the 401A course and applied on a department of theater production. Prerequisite: THEA 217, THEA 218A, concurrent enrollment in THEA 401A.

THEA402 - Directing Studio 402-3 to 6 Directing Studio. Introduction to the art of directing through examination of various genres. An exploration of the fundamentals of directing culminating in scene

work and studio presentation. Advanced students will approach the directing process from play selection through dramaturgy to production and through the context of contemporary directing styles. Prerequisites: THEA 217 and THEA 311A with grades of C or better.

THEA403A - Advanced Movement for the Actor 403A-3 Advanced Movement for the Actor. Advanced studies in stage movement with special attention to period styles. Prerequisite: THEA 303A, THEA 317A, THEA 317B.

THEA403B - Advanced Voice for the Actor 403B-3 Advanced Voice for the Actor. Advanced studies in voice with special attention to stage dialects and advanced vocal techniques. Prerequisite: THEA 303B, THEA 317A.

THEA404 - Theater Management 404-3 Theater Management. Discussion of legal and financial aspects concerning the professional and community theaters of the United States. Consideration of and practice in managerial activities of an educational theater including administration, purchasing, and accounting practices, direct sales, publicity, promotion and public relations.

THEA406 - Properties Studio 406-9 (3,3,3,) Properties Studio. Beginning and advanced studio work in traditional and non-traditional crafts for theatrical events, including mask work, puppetry, stage furniture construction, upholstery, weaponry, armor, and special effects. Repeatable. Prerequisite: THEA 218A with a grade of C or better. Studio Fee: \$60.

THEA407 - Scene Design 407-3 Scene Design. Technical and artistic aspects of scene design. Theory and practice. Prerequisite: THEA 218A, THEA 413 with a grade of C or better.

THEA409 - Scene Painting Studio 409-6 (2,2,2) Scene Painting Studio. Studio work in basic and advanced scene painting techniques and materials. Projects include wood, drapery, foliage, marble, transparencies, scrim painting, dye painting, faux finishes, metal reflections, and murals. Repeatable. Prerequisite: THEA 218A. Studio fee: \$65.

THEA410 - Children's Theater 410-9 Children's Theater. Theory and practice in performing theater for children. Class activities include lectures on various aspects of production as well as producing a touring children's play for local area schools. Special approval needed from the instructor.

THEA411C - New Play Acting 411C-3 New Play Development for the Actor. This class prepares undergraduate actors for a prominent feature of the U.S. theatre landscape: the new play workshop. This ensconced entity-somewhere between a production and a casual reading-is an economic and artistic powerhouse, not just for playwrights, but for all theatre artists, particularly the many actors who are paid to participate in the new play development process. This class imitates the methods and environments of the most prominent new play workshops in order to demystify a process that can be both artistically satisfying and lucrative for actors. Prerequisites: THEA 217 and THEA 220 with grades of C or better.

THEA412 - Patterning & Draping 412-2 Patterning and Draping for the Theater. This course introduces the theatrical costume design and technical student to the basics of pattern development and construction techniques used to develop a 3-dimensional theatrical costume, with focus on giving the student a working knowledge of costume production, flat patterning, and draping techniques. Prerequisite: THEA 218C with a minimum grade of C. Studio fee: \$25.

THEA413 - Drafting for the Theater 413-6 (3,3) Drafting for the Theater. Development of the student's skill in scenographic techniques including ground plans, sections, elevations, and detail construction drawings. Prerequisite: THEA 218A with a minimum grade of C.

THEA414 - Costume Design 414-3 Costume Design. Technical and artistic aspects of costume design. Development of the design process, understanding and use of color theory and fabric, and practice of costume drawing techniques. Prerequisite: THEA 218C with a minimum grade of C.

THEA415A - Costume Crafts I 415A-2 to 4 Costume Crafts I. This course focuses on advanced skills in costume technology, including but not limited to, dyeing, fabric modification, millinery, wig styling, armor, jewelry making, armor, corsetry and period accessories. Topics covered vary by semester. Prerequisite: THEA 218C with a grade of B or better. Craft Fee: \$35.

THEA415B - Costume Crafts II 415B-2 to 4 Costume Crafts II. This course focuses on advanced skills in costume technology, including but not limited to, dyeing, fabric modification, millinery, wig styling, armor, jewelry making, armor, corsetry and period accessories. Topics covered vary by semester. Prerequisite: THEA 218C with a grade of B or better. Craft fee: \$35.

THEA416A - Structural Design Stage I 416A-3 Structural Design for the Stage Part I. An in-depth study of the art and practice of structural design for the stage including forces, stresses, strains, load analysis, geometric properties of materials and simple beam design. Prerequisite: THEA 218A with a minimum grade of C.

THEA416B - Structural Design Stage II 416B-3 Structural Design for the Stage Part II. Continued study of the art and practice of structural design for the stage including beam design, column and tension member design and combined loading design for sawn lumber and steel materials. Prerequisite: THEA 218A and 416A with minimum grades of C or special approval needed from the instructor.

THEA417 - Advanced Acting 417-3 to 6 (3,3) Advanced Acting. Utilization of the actor's process in the performance of various theories and styles of acting. May be repeated once for credit. Prerequisite: THEA 317B.

THEA418 - Lighting Design 418-3 Lighting Design. Investigation of stage lighting design, theory and professional practice. Special attention to color theory and its application to stage lighting. Lecture/Laboratory. Prerequisite: THEA 218B and THEA 413 with grades of C or better.

THEA419 - Technical Direction 419-3 Technical Direction. Advanced study of principles and procedures of scenic construction and stage rigging. Includes scene shop organization, materials, and specialized stage equipment; preparation for professional technical direction. Lecture and laboratory to be arranged. Prerequisite: THEA 218A and THEA 413 with grades of C or better.

THEA420 - Senior Seminar 420-1 Senior Seminar. Students are provided an opportunity to integrate their previous training in theater and to assess it. Students are exposed to information skills and strategies necessary for survival in the professional world. Mandatory Pass/Fail. Not for graduate credit. Concurrent enrollment in THEA 421.

THEA421 - Senior Project 421-1 Senior Project. Preparation of any of the following based on the student's area of interest: a portfolio, script, critical research paper, design, acting recital or direction of a short play. Projects are chosen and prepared under the supervision of a theater faculty member. Mandatory Pass/Fail. Not for graduate credit. Concurrent enrollment in THEA 420.

THEA422 - Playreading 422-1 Playreading. Build student's familiarity with theatrical canon through reading and discussion of a play a week. Brief writing assignments help develop deeper understanding of individual plays and connections between scripts. As reading list changes each semester, the class may be repeated up to three times.

THEA423 - Musical Theater Dance II 423-1 to 3 (1 per semester) Musical Theater Dance II. Developing and performing musical theater choreography using advanced jazz, tap, ballet, social and modern dance skills. Prerequisite: THEA 323 with a C or better.

THEA424 - Audition Techniques 424-3 Audition Techniques. Methods of auditioning for theater and musical theater. The course covers audition techniques for open calls, cold reading/singing, improvisation, interviews, as well as the development of an audition portfolio and the preparation of head shots and resumes. Prerequisite: THEA 217 with a grade of C.

THEA425 - Metal Fabrication 425-3 Metal Fabrication for Theater. A study of the knowledge and practice of various welding processes and fabrication techniques for the stage as well as an understanding of the theater practitioner's responsibility to the quality and safety of their products. Prerequisite: THEA 218A with a grade of C or better. Studio fee: \$40.

THEA450 - Topical Seminar 450-1 to 9 Topical Seminar. An intensive examination and application of selected areas of interest. Topics will vary and may include such areas as stage management, audition and interview, current political theater.

THEA454 - American Theater 454-3 American Theater. The development of American theater from colonial times to the present. Includes a study of the American musical theater from preminstrels through contemporary music-drama.

THEA455 - Dramaturgy 455-3 Dramaturgy. An introduction to the theory and practice of dramaturgy, including a survey of contemporary critical theories as they apply to the pre-production work of the dramaturg. The student will apply methodologies studies to plays from the classical repertory and to the works of new playwrights. Prerequisite: THEA 311A with a minimum grade of C.

THEA460 - Black Theater 460-3 Black Theater: Intersections of Culture and Performance. (Same as AFR 420) This course will freely examine the intersections between African and African American Theater. It will study the origins, form and agenda of Black Theater by tracing the commonalities of culture and Performance between African and African American Theaters. Students will be exposed to seminal essays, topical plays and performances while they hone their own critical and creative skills.

THEA500 - Research Methods 500-1 Theater Research Methods. An introduction to the principles and methods of research and writing in theater with a focus on selected areas of specialization within the various degree programs. Required of all Masters Theater students. Restricted to Theater Majors. Special approval needed from the instructor.

THEA501 - Contemporary Developments 501-3 Contemporary Developments. A survey of the significant developments in theater and related arts from the beginning of the 19th century to the present through the study of documentary material, critical works, and selected plays. Individual reports, guest lecturers and lectures provide focus on selected areas. Required reading encompasses a broad spectrum of subjects.

THEA502 - Advanced Directing Studio 502-3-12 (3,3,3,3) Advanced Directing Studio. Emphasis on practical directing problems and concerns of individual students through research, rehearsal and performance. Includes survey of directing theories and practices with laboratory application of directing techniques. Special approval needed from the instructor.

THEA503 - New Play Development 503-1 to 3 New Play Development. This is an interdisciplinary course-meant for designers, directors, dramaturgs, and playwrights-that prepares students for a prominent feature of the U.S. theatre landscape: the new play workshop. This ensconced entity, somewhere between a production and a casual reading, is an economic and artistic powerhouse, not just for playwrights, but for all theatre artists. This class imitates the methods and environments of the most prominent new play workshops in order to demystify a process that can be both artistically satisfying and lucrative for all theatre artists. Prerequisite: THEA 511A with a grade of C or better or concurrent enrollment allowed.

THEA504A - Theories and Conventions 504A-3 Drama, Theories and Conventions. A historical and critical survey of dramatic theory, examining key critical texts and representative plays; from the Greeks through the Jacobean. Restricted to graduate standing or special approval needed from the instructor.

THEA504B - Theories & Conventions B 504B-3 Drama, Theories and Conventions. A historical and critical survey of dramatic theory, examining key critical texts and representative plays; from the restoration to the 20th Century. Restricted to graduate standing or special approval needed from the instructor.

THEA506 - The Collaborative Process 506-2 to 4 The Collaborative Process. The theory and practice of the collaborative processes involved in play production; how designers, technicians, directors and playwrights interact with and communicate to each other to work as a creative team. Activities involve both hypothetical and fully realized productions when appropriate. May be taken for up to 4 hours.

THEA510 - Production Design Seminar 510-6 (1,1,1,1,1,1) Production Design Seminar. Exploratory workshop experience in rendering techniques, creative problem solving, design aesthetics, and production philosophies. To be taken by graduate production design students in residence, each semester, with exceptions by consent of instructor.

THEA511A - Playwriting I 511A-3 Playwriting I. This course assumes basic writing knowledge. It advances techniques of structure and dialogue in playwriting. Written exercises are submitted and

discussed to identify dramatic events. Students will self-produce several short plays in collaborative performances. Students will initiate development of a full-length play. Special approval needed from the instructor.

THEA511B - Playwriting II 511B-3 Playwriting II. This course continues to develop advanced techniques of structure and dialogue in playwriting. Students will examine canonical plays to understand the tools used by the playwrights. Students will write short plays and self-produce several short plays in collaborative performances. Students will write a full-length play. Prerequisite: THEA 511A. Special approval needed from the instructor.

THEA512 - Adv Costume Construction 512-2 to 8 Advanced Costume Construction. This course focuses on advanced skills in the areas of cutting and draping for the theater. A variety of techniques will be taught, including but not limited to, flat patterning, bias draping, tailoring, and historical construction techniques. Prerequisite: THEA 218C, THEA 412 or special approval needed from the instructor.

THEA516 - Advanced Theater Design & Prod 516-2-12 Advanced Theater Design and Production. An advanced studio-based study of the theories and practices of modern production and design with particular emphasis on the interaction of the sub-disciplines of scenic, costume, light, sound design, and technical production as well as the collaborative nature of theatrical production. Special approval needed from the instructor.

THEA520A - Period Style Theater I 520A-3 Period Style for Theater I. A survey of the costumes, architecture, furniture, decorative styles and motifs of major periods and countries relating to western culture and theater. Egyptian to the Renaissance.

THEA520B - Period Style II 520B-3 Period Style for Theater II. A survey of the costumes, architecture, furniture, decorative styles and motifs of major periods and countries relating to western culture and theater. Late Renaissance to 20th Century. Prerequisite: THEA 520A or special approval needed from the instructor.

THEA522 - SIU Summer Theater 522-1 to 12 SIU Summer Theater. Practical experience in summer stock play production. Performance or technical work in SIU Summer Theater only. Maximum of six hours per summer. Special approval needed from the instructor.

THEA525 - Contemp Experiment Drama 525-3 Contemporary Experiments in Drama. By studying contemporary literary theory and applying these critical tenets to new American plays, students develop tools to use in reading, understanding and writing plays in unconventional, non-traditional styles. Course work includes extensive reading of both essays and plays, discussing these matters, preparing reports and writing a play. Special approval needed from the instructor.

THEA530 - Independent Study 530-1 to 12 Independent Study. Independent research on selected problems. A maximum of three credit hours may be taken for a single project. Special approval needed from the instructor.

THEA550 - Topical Seminar 550-2 to 6 (2 per topic) Topical Seminar. In-depth studies of topics of special interest to advanced students concerning individual or groups of playwrights, directors, designers, and their techniques and theories. Topic is determined in advance. Special approval needed from the instructor.

THEA560 - Professional Work Experience 560-1 to 21 Professional Work Experience. Credit may be granted for professional work experience prior to acceptance into the program. Special approval needed from the instructor. Graded S/U only.

THEA561 - Theater Internship 561-1 to 12 Theater Internship. After completion of the M.F.A. core curriculum and basic courses in student's specialization, credit may be granted for internship at professional theaters, training programs, or studios. Special approval needed from the instructor. Graded S/U only.

THEA599 - Thesis 599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree.

THEA600 - Dissertation 600-1 to 36 (1 to 16 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

THEA601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Theater Faculty

Bogumil, Mary L., Associate Professor, Ph.D., University of South Florida, 1988.

Clark, Darryl, Assistant Professor, M.F.A. in Dance, State University of New York College at Brockport, 2005

Fagerholm, Thomas, Assistant Professor, M.F.A., Minnesota State University, Mankato, 2012.

Fink, Timothy, Professor, M.F.A., Southern Illinois University Carbondale, 1993.

Fletcher, Anne, Distinguished Professor, Ph.D., Tufts University, 1992.

Juntunen, Jacob, Associate Professor, Ph.D., Northwestern University, 2007.

Kidd, J. Thomas, Associate Professor and Chair, M.F.A., Southern Illinois University Carbondale, 1998.

Merrill-Fink, Lori, Associate Professor and Director University Honors Program, M.F.A., University of Arizona, 1988.

Moe, Christian H., Professor, Emeritus, Ph.D., Cornell University, 1958.

Naversen, Ronald, Professor, Emeritus, Ph.D., Southern Illinois University, 1990.

Ojewuyi, Olusegun, Associate Professor, M.F.A., Yale University, 1998.

Patrick Benson, Susan, Associate Professor, M.F.A., Rutgers University, 1995.

Rush, David, Professor, Emeritus, Ph.D., University of Illinois, 1974.

Varns, Mark, Professor, M.F.A., University of Missouri-Kansas City, 1990.

Vintu, Tatiana, Assistant Professor, M.F.A., Tulane University, 2014.

Zea, Wendi, Associate Professor, M.F.A., Kent State University, 2006.

Adjunct Undergraduate Theater Faculty

Edwards-Britton, Molly Seale, M.F.A., University of Texas at Austin, 1981.

Technical Resource Management

The Bachelor of Science in Technical Resource Management (TRM) is specifically designed for those students who have entered into a technically-oriented career path for which a traditional baccalaureate degree may not be available. This degree program is a degree completion program (juniors and seniors only). The TRM degree is ideally suited for students with a community college Associate in Applied Sciences (AAS) technical degree, technical institute occupational degree, individuals with military training/schools and experience, and trade apprenticeship and journeyman education and experience. Further this degree can also provide a bridge for those seeking re-entry into the workforce following displacement due to personnel, organizational, or other general economic factors.

The TRM curriculum focuses on preparing technically-oriented individuals for career advancement into supervisory, leadership/management, and entrepreneurial roles in their fields of technical expertise. Foundational coursework further provides in depth understanding and application in the fundamentals of project management, quality management, management and leadership of personnel in technical environments, data analysis, and professional communications within technical environments. Additionally, each student works with the program advisor to design an academic plan that reflects his or her specific career goals.

The TRM degree program is offered in three delivery formats: 1) traditional on-campus face-to-face classes, 2) hybrid (off-campus and online), and 3) fully online.

General admission to the TRM program requires a 2.0 GPA. The Capstone Option may be available to eligible students who have earned an Associate in Applied Science (AAS) degree or the equivalent. The Capstone Option reduces University Core Curriculum requirements from 39 to 30 hours.

Students who are interested in pursuing a degree in Technical Resource Management are encouraged to contact a program representative as early as the first semester at their community college. For more information, contact the School of Information Systems and Applied Technologies. Contact information may be found at <http://isat.siu.edu/undergraduate/technical-management/>.

Bachelor of Science Degree in Technical Resource Management, College of Applied Sciences and Arts

The Bachelor of Science in Technical Resource Management requires a minimum of 120 semester hours, to be completed in accordance with SIU Degree Requirements (see University Core Curriculum section). In addition to University Core Curriculum and TRM courses, students can select from a specialization or one of over 60 minors, or they can develop an individualized plan of study that complements their professional aspirations.

Technical Resource Management Major - Organizational Development Specialization

The Organizational Development specialization provides students with a comprehensive curriculum in the management of technical enterprises. Students who select the specialization will have the opportunity to explore the labor-management relationship, the relevance of technology and innovation to international trade, the management of a sustainable enterprise, the fiscal and legal aspects of management, and the professional development of the individual, as well as selected special topics. The broad perspective of the specialization equips graduates for mid-level positions in most any industry.

The specialization includes the 15 hours of the TRM Core Requirements plus a total of 21 semester hours of TRM Support Courses to be selected from the following: TRM 332, TRM 361, TRM 362, TRM 421, TRM 426, TRM 440, TRM 483, TRM 488, and TRM 490.

Technical Resource Management Major-Health and Safety Management Specialization

(Available only at SIU Off-Campus locations)

This specialization augments the TRM program's technical management core and builds upon the student's technical training to open career opportunities as a Safety Technologist. Typically, people in occupational health and safety roles are making worksite assessments to determine risks, identifying potential hazards and recommending controls, evaluating risks and hazard control measures, investigating incidents, maintaining and evaluating incident and loss records, and preparing emergency response plans. This training supports certification by the Council on Certification of Health, Environmental and Safety Technologists (CCHST), Savoy, Illinois, including Construction Health and Safety Technician and/or Occupational Health and Safety Technician, and meets the blueprint relating to program management, worksite auditing, training, and professional responsibility.

The specialization includes 15 semester hours, as follows: HED 335, HED 345, HED 430, HED 435, and HED 496. See Health Education for course descriptions. The specialization courses are taken to satisfy the Approved Electives requirement.

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	41
Requirements for Major in Technical Resource Management	36
TRM Core Requirements (or approved equivalents): TRM 316, TRM 364, TRM 383, TRM 464, and TRM 470	15
TRM Support Courses, select from: TRM 332, TRM 361, TRM 362, TRM 421, TRM 426, TRM 440, TRM 483, TRM 488, TRM 490, or approved equivalents	6

Degree Requirements	Credit Hours
Approved Electives (specialization, minor, or individualized plan)	15
Career Electives	43
An Associate in Applied Science degree (AAS) from an accredited institution meets this requirement. An approved apprenticeship or a maximum of 30 semester hours of internship, work experience credit, or independent study may be part of these 43 hours.	
Total	120

1 The Capstone Option reduces University Core Curriculum requirement to 30 hours.

Technical Resource Management Courses

TRM259 - Occupational Education 259-1 to 60 Occupational Education Credit. Credit will be awarded via program evaluation of past lower-level non-accredited occupational education and training related to the student's academic and career objectives. Unless otherwise determined by the program director, the credit may be applied only to the approved technical or career elective requirement of the Technical Resource Management degree. Restricted to TRM majors.

TRM316 - Apps of Technical Writing 316-3 Applications of Technical Writing. (Same as ISAT 366 and PSM 316) This course will increase students' abilities in communicating various workplace documents common to technical disciplines. The course is designed to meet the writing portion of the College's Communication-Across-the-Curriculum initiative. A grade of C or better is required. Prerequisite: ENGL 101 with a grade of C or better. Restriction: College of Applied Sciences and Arts.

TRM319 - Occupational Internship 319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the preceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.

TRM320 - Work Study Internship 320-1 to 10 Work Study Internship. Provides work-study students with an opportunity to participate in an on-campus work experience related to their academic program and career objectives. Hours and credits are to be individually arranged. Mandatory Pass/Fail.

TRM332 - Labor-Management Relations 332-3 Labor-Management Relations. The student will gain an understanding of the basic concepts and techniques of modern labor-management relations. Topics covered include labor history, labor law, unions, labor contracts, collective bargaining processes, grievance and arbitration procedures, and the move towards participative models of labor relations. Restricted to TRM major.

TRM350 - Technical Career Subject 350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Special approval needed from the school.

TRM358 - Work Experience Credit 358-1 to 30 Work Experience Credit. Credit will be granted via departmental evaluation of prior job skills, management-worker relations and supervisory experience gained through experiences related to the student's academic and course objectives. Unless otherwise

determined by the school director, this credit may be applied only to the approved Career Elective requirements of the Technical Resource Management degree. Restriction: TRM major.

TRM359 - Occupational Education 359-1 to 60 Occupational Education Credit. Credit will be awarded via program evaluation of past upper-level non-accredited occupational education and training related to the student's academic and career objectives. Upper-level credit is defined as that which is determined to be equivalent to junior-or senior-level college coursework either by faculty evaluation or by the evaluation of a recognized body, such as the American Council on Education (ACE). Unless otherwise determined by the program director, the credit may be applied only to the approved technical or career elective requirement of the Technical Resource Management degree. Restricted to Technical Resource Management majors.

TRM361 - Fiscal Aspects Tech Mgt 361-3 Fiscal Aspects of Technical Management. An introduction to fiscal structures and problems encountered in the technically oriented enterprise. Restriction: TRM major.

TRM362 - Legal Aspects Tech Mgmt 362-3 Legal Aspects of Technical Management. An introduction to the types of legal problems encountered in the technically oriented enterprise. Restriction: TRM major.

TRM363A - Topics-Mgt Field Experience 363A-3 Special Topics in Technical Management-Management Field Experience. Specialized study for the investigation of management problems relating to the student's career objective. Study of the techniques of employee relationships to include the dynamics and procedures required for managing the work center. Need not be taken sequentially.

TRM363B - Topics-Research Mgt Appl 363B-3 Special Topics in Technical Management-Research Management Applications. Specialized study for the investigation of management problems relating to the student's career objective. Study of the techniques of employee relationships to include the dynamics and procedures required for managing the work center. Need not be taken sequentially.

TRM363C - Topics-Compare Analysis Strats 363C-3 Special Topics in Technical Management-Comparison Analysis of Organizational Strategies in the Professions. Specialized study for the investigation of management problems relating to the student's career objective. Study of the techniques of employee relationships to include the dynamics and procedures required for managing the work center. Need not be taken sequentially.

TRM363D - Topics-Current Trends 363D-3 Special Topics in Technical Management-Current Trends. Specialized study for the investigation of management problems relating to the student's career objective. Readings regarding economic trends impacting upon the business or profession. Study of the techniques of employee relationships to include the dynamics and procedures required for managing the work center. Need not be taken sequentially.

TRM363E - Topics-Employee Relations 363E-3 Special Topics in Technical Management-Employee Relations. Specialized study for the investigation of management problems relating to the student's career objective. Study of the techniques of employee relationships to include the dynamics and procedures required for managing the work center. Need not be taken sequentially.

TRM364 - Work Center Management 364-3 Work Center Management. This course is an introduction to the language and concepts of management. Focus is on ethical and social responsibility, the planning process, organizational structure and culture, leadership, and managerial controls. Management topics such as decision making, organizational change, staffing, motivation, and communication will be addressed. A grade of C or better is required. Restriction: TRM major.

TRM383 - Data Apps & Interpretation 383-3 Data Applications and Interpretation. (Same as ISAT 365) This course will give students an understanding of the basic principles and techniques involved in the statistical treatment of data, including the selection of data sources, the design of statistical studies, and the analysis, synthesis, and utilization of data. Students will gain experience in using data for decision-making in their respective professions. TRM majors must earn a grade of C or better. Prerequisite: University Core Curriculum Mathematics with a grade of C or better.

TRM421 - Professional Development 421-3 Professional Development. Presents prevailing elements to attain technical career success. Organizational cases explore management and leadership roles, training, strategic planning, and career research explores employment processes and applications practices.

Deliverables include a portfolio comprised of career case studies and professional profile materials. Prerequisite: TRM 316 w/C or better or ENGL 102 w/C or better. Restriction: TRM major.

TRM425 - Operations Management 425-3 Operations Management. This course is designed to provide students with an introduction to the field of operations management followed by the examinations of strategic issues and practical applications in the operations management process, which further include: forecasting, product and service design, capacity planning, facility layout and planning, scheduling, an introduction to quality and project management, MRP and ERP processes, inventory and supply chain management, and lean operations from a technical management perspective. A grade of C or better is required. Prerequisite: TRM 383 with a grade of C or better. Restriction: TRM major.

TRM426 - Technology&International Trade 426-3 Technology and International Trade. The international trade of products and services is studied by examining the technology development and transfer concerns of transnational corporations and national governments in industrialized, newly industrialized and developing countries.

TRM440 - Sustainable Enterprises 440-3 Technology and Management of Sustainable Enterprises. This course focuses on the technology and business principles found in the growing sector of environmentally green enterprise. A variety of sustainable business practices will be studied.

TRM464 - Quality Management 464-3 Managing For Quality. The course focuses on management techniques used to upgrade the level of quality of products and services in organizations. Topics cover the processes of continuous quality improvement: strategies and objectives, quality measures, participative management practices, worker empowerment, customer preferences and expectations, vendor/supplier inputs, process technology outputs, integrated feedback loops, and quality audits and review. A grade of C or better is required. Prerequisites: TRM 364 and TRM 383 with grades of C or better. Restriction: TRM Major.

TRM470 - Project Management 470-3 Project Management. This course is designed to provide students with an overview of the project management process based on the knowledge areas/processes developed by Project Management Institute (PMI). This course further provides an in-depth examination of the activities needed to successfully initiate, plan, schedule, and control the time and cost factors of the project from a technical management perspective. Course emphasis using the content of the PMBOK prepares a student for the Certified Associate Project Manager (CAPM) examination/certification. A grade of C or better is required. Prerequisites: TRM 364 and TRM 383 with grades of C or better. Restriction: TRM major.

TRM483 - Quality Measurement 483-3 Quality Measurement. Specialized study of the design of quality control for the improvement of processes and to enhance product or service outcomes. Instruction will focus on the construction of Statistical Process Control (SPC) diagrams and charts appropriate to the technologies found in various types of work environments. The major course project requires students to design aspects of an SPC program based on their specialty area. Lecture three hours. Not for graduate credit. Prerequisite: TRM 383.

TRM488 - Technical Innovation 488-3 Technical Innovation. A lecture course intended to educate students on how to survive and prosper in hyper-innovative work places. Both intrapreneurial and entrepreneurial aspects will be pursued, as will planned obsolescence and product replacement. Not for graduate credit. Prerequisite: TRM 316, 383, 364.

TRM490 - Technical Professional Theory 490-3 Technical and Professional Theory. A department honors seminar with challenging assignments and limited enrollment to prepare the student for the values, needs, demands, ethics, epistemologies, and socioeconomic roles of technical work, technicians, professional arenas and professional fields. Not for graduate credit. Prerequisite: 3.25 or better GPA in major, TRM 316 or ISAT 366.

Workforce Education and Development

The Department of Workforce Education and Development offers a major in Workforce Education and Development with specializations in: (a) Organizational Training and Development; and (b) Career and Technical Education. Graduates with the degree under the Organizational Training and Development specialization are prepared for such positions as instruction and learning (training) specialist, training curriculum developer/instructional systems designer, human resource specialist, or internal auditor/training evaluator in private sector training departments. Students may pursue a State Illinois Professional Educator License with an endorsement in the following areas: Business, Marketing, and Computer Education; Family and Consumer Sciences; Health Careers; Technology Education. A grade of C or better is required in all teacher education coursework. Eligible teacher candidates may elect to apply for Capstone. Graduates with a degree in Workforce Education and Development under the Career and Technical Education specialization are prepared for teaching positions in public secondary career/technical education programs. On approval of the department, students may complete a minor in WED major within the Organizational Training and Development specialization. A grade of C or better is required in all WED prefix courses. Eligible students may elect to apply for Capstone.

Bachelor of Science Degree in Workforce Education and Development, College of Education and Human Services

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
WED Core Requirement: WED 466	3
Recommended Courses for Major in Workforce Education and Development	78
Total ¹	120

¹ 42 hours of upper level (300-400) coursework is required to meet Senior Institution Hours.

Workforce Education and Development Minor

A minor in Workforce Education and Development consists of 20 hours. The student and advisor plan minors for Workforce Education and Development.

Organizational Training and Development Specialization

The purpose of the Organizational Training and Development (OTD) specialization is to prepare people for training and development positions in corporate, apprenticeship, proprietary, government, military and volunteer organizations, as well as, community colleges and other post-secondary technical institutions. OTD students are prepared in the areas of *instruction and learning, training program development, administration, and supervision*. Also, the OTD specialization establishes a sound academic base for advanced study in the WED graduate concentration. OTD graduates are prepared as technical instructors, occupational analysts, curriculum designers, curriculum writers, managers, supervisors, and related training and development positions.

The OTD specialization is comprised of "Regular" and "Capstone" options. Both options have *University Core, Professional Sequence, Occupational Training, and Work Experience* requirements. The semester hours posted for each area represent the minimum number of semester hours needed to complete the 120 semester hour requirement for graduation.

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
WED Core Requirement: WED 466	3
Recommended Professional Sequence	33
WED 381, WED 382, WED 460, WED 461, WED 462, WED 463, WED 465, WED 468, WED 469, WED 486, WED 498	
Occupational Training: 29 semester hours minimum	29
WED 259 and/or WED 359, and technical/professional transfer work	
Work experience: 16 semester hours minimum	16
WED 258 and/or WED 358	
Total	120

Career and Technical Education Specialization

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
To include MATH 101 or MATH 108; PSYC 102; EDUC 211; EDUC 214 Family and Consumer Sciences also requires: CHEM 106 or CHEM 140A and HND 101	
Requirements for Major in Workforce Education and Development	46
WED Core Requirement: WED 466	3
Professional Education Requirements - See below for each content area.	
Specialization Requirements ²	32
Total	120

¹ Capstone = 30; UCC = 39.

² Teacher candidates choosing the health career option in the Career and Technical Education specialization must: (1) have an Associates Degree in Nursing; (2) qualify for admission to Capstone; and (3) complete the core requirement and 57 semester hours beyond the 60 semester hours earned in the Associates degree. Teacher candidates choosing the technology education option in the Career and Technical Education specialization must: (1) have an Associate in Applied Science Degree; (2) qualify for admission to Capstone; and (3) complete the core requirements and 57 semester hours beyond the 60 semester hours earned in the Associates degree. For those teacher candidates intending to receive state

teacher licensure, additional courses may be required. Career and Technical Education Specialization teacher candidates selecting this specialization will complete teacher licensure requirements as identified by the ISBE Division of Educator Licensure for their selected career and technical education option.

For your individualized curricular guide, see your Student Education Planner in DegreeWorks.

Business, Marketing and Computer Education

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
ACCT 220; ACCT 230 or ACCT 240	6
ECON 240; ECON 241	6
FIN 270 or FIN 280	3
MGMT 208 / ACCT 208 / FIN 208	3
WED 427 or MKTG 305	3
MGMT 304	3
MATH 139	3
Requirements for Major in Workforce Education and Development	24
WED 404, WED 405, WED 407, WED 413, WED 416A, WED 416B, WED 472, WED 473	
(For Business Computer Programming certification, an additional six hours of pre-approved courses in computer programming or systems analysis is required)	
WED Core Requirement: WED 466	3
Professional Education Requirements	24
EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, and EDUC 401	
Additional Education Requirement: CI 360	3
Total	120

Family and Consumer Sciences

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
CI 227, CI 237, CI 327, CI 337	12
FIN 200	3
MKTG 305	3
CHEM 106 or CHEM 140A	3-4
Requirements for Major in Workforce Education and Development	
WED Core Requirement: WED 466	3
WED 413, WED 416C, WED 416D, WED 420, WED 427, WED 472, WED 473	21
Additional hours of pre-approved courses required for licensure in designated areas of Fashion Design and Merchandising and/or Human Nutrition and Dietetics, Hospitality and Tourism Administration and/or Living Environments	9
Professional Education Requirements or pre-approved career electives for Educational Services/Extension	24
EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319 and EDUC 401	
Additional Education Requirement: CI 360	3
Total	120-122

Technology Education

Admission: Completion of the Associate in Applied Science Degree (minimum of 60 semester hours - 48 hours of technical courses plus 12 hours of transferred University Core Curriculum courses), credentialed through national or Illinois occupational/industry skills standards system in the industrial occupation that the teacher candidate will teach, and admitted to the Capstone Option.

Degree Requirements	Credit Hours
Requirements for Major in Workforce Education and Development	
WED 403 or WED 404 or WED 474	3
WED 413, WED 416F, WED 259, WED 460	12
WED Core Requirement: WED 466	3

Degree Requirements	Credit Hours
Professional Education Requirements	24
EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319 and EDUC 401	
Additional Education Requirement: CI 360	3
Electives	12
Total	57

Health Careers

Admission: Completion of the Associate Degree in Nursing (minimum of 60 hours – 45 hours of technical nursing courses plus 15 hours of transferred University Core courses), licensed through the National Council Licensure Examination for Registered Nurses, and admitted to the Capstone Option.

Degree Requirements	Credit Hours
WED 404, WED 407, WED 413, WED 416E, WED 460	15
WED Core Requirement: WED 466	3
Professional Education Requirements	24
EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319 and EDUC 401	
Electives	12
Additional Education Requirement: CI 360	3
Total	57

Workforce Education and Development Courses

WED258 - Work Experience 258-1 to 30 Work Experience. Credit granted for past work experience while employed in business, industry, labor, government service or military organizations. Credit determined by departmental evaluation. Restricted to WED majors and completion of 12 semester hours of WED courses with C or better.

WED259 - Occupational Training 259-1 to 60 Occupational Training. Credit is awarded for all formal training beyond high school that prepares an individual for entry-level employment in an occupation; nontransferable training received from "other than accredited educational institutions; that is, corporate, apprenticeship, proprietary, government, military or volunteer organizations or non-accredited post-secondary vocational-technical institutions." Credit determined by departmental assessment of prior learning. Restricted to WED majors. This course does not qualify as SIUC Senior Institution credit.

WED302 - Business Communications 302-3 Business Communications. Creating and managing written and oral administrative communications including the analysis, planning and practice of composing different types of internal and external communications in various administrative and business contexts. To successfully complete this course, a communication competency examination (additional fee required) must be passed with at least 70% accuracy prior to University course drop date. Prerequisite: ENGL 101 or equivalent.

WED327 - Mgmt of Family Resources 327-3 Management of Family Resources. Emphasis of the resources used in Family and Consumer Sciences (clothing, food, housing, money, time and other resources related to daily needs of individuals and families) to enhance family well-being. Emphasis given to life skills reflected in needs of students.

WED358 - Work Experience 358-1 to 30 Work Experience. Credit is awarded for work experience that demonstrates an individual's increased value to the employer through promotion, in-service training, assumed supervisory and/or increased technical responsibilities and years of employment. The credit is awarded for documented (past) work experience. Credit determined by departmental assessment of prior work experience. Restricted to WED majors and completion of 12 semester hours of WED courses with C or better.

WED359 - Occupational Training 359-1 to 60 Occupational Training. Credit is awarded for all formal training beyond high school provided by "other than accredited educational institutions, that is, corporate, apprenticeship proprietary, government, military or volunteer organizations or non-accredited proprietary vocational-technical schools." The training offered by each of the organizations is recognized by an outside professional association(s) or accrediting body or bodies. WED 359 credit can be awarded for either pre-service or in-service training received by the student. Credit determined by departmental assessment of prior learning. Restricted to WED majors.

WED381 - Technical Communication 381-3 Technical Communication. An introduction to the professional field of human resource development (HRD) with a focus on trends, issues, roles, and competencies. Content and activities are provided to assist students in planning and preparing for a career in human resource development.

WED382 - Career Development 382-3 Developing Your Career. An introduction to the professional field of human resource development (HRD) with a focus on trends, issues, roles, and competencies. Content and activities are provided to assist students in planning and preparing for a career in human resource development (HRD).

WED395 - Field Experience 395-1 to 30 Field Experience. Supervised work experience in a departmental approved position in business, industry, labor, government or military organizations for students in Workforce Education and Development. Clock hours/credit arranged by department coordinator.

WED398 - Special Problems 398-1 to 3 Special Problems. Independent study for qualified students in Workforce Educational and Development. Special approval needed from the instructor.

WED403 - Managing Tech for WED 403-3 Integrating and Managing Technology Applications for Workforce Education & Training. Design of workforce training applications integrating professional advanced features of computer software, communication technologies and multimedia features, including management of educational LAN systems. Restricted to WED majors or consent of department.

WED404 - Apps Technology for WED 404-3 Technology Applications in Workforce Education and Training. Analyses of technology used and demonstration of skill level needed to train others in secondary/postsecondary education and business training environments on technological administrative processes, data management, and curriculum integration. Students will learn advanced computing concepts and applications using integrated software. Prerequisite: WED 403 or equivalent. Restricted to WED majors or consent of department.

WED405 - Multimedia-based Instruction 405-3 Multimedia-based Instruction for Workforce Education. Acquisition of skills to produce multimedia "assets" (web page, audio/sound bytes) and application of instructional design techniques to computer-based instruction in workforce education. Impact of

multimedia on workplaces and workforce training and utilization of course management systems to deliver instruction will be analyzed. Prerequisite: WED 404. Restricted to WED majors or consent of department.

WED407 - Admin Commun & Technology 407-3 Administrative Communications and Technology. Application of communication theory, human relations concepts, and information technology to workplace situations. The process of organizational information for productivity will be stressed. Students will acquire skills to make sound decisions of how to best communicate in work-based situations. Students will learn computerized procedures for communication. Prerequisite: WED 404 or equivalent. Restricted to WED majors or consent of department.

WED410 - Issues Business Training Educ 410-3 Issues in Business Training/Education. Study of current issues in business training and education related to history, current status and trends. Organization of instruction, instructional settings, relation to general education, integration and impact of technology, curriculum development/review and evaluation of business training/education impact in the workplace. Restricted to WED majors or consent of department.

WED413 - Org & Dir Instr-CTE 413-3 Organizing and Directing Instruction in Secondary Career and Technical Programs. Techniques and procedures applicable to effective teaching including planning for instruction, instructional design technology and general teaching strategies for the secondary career and technical classroom. This course will study pedagogy and utilize various techniques and technology to help students master the skills needed in their respective careers. Students will learn about and practice various teaching methods including demonstrations, cooperative learning, service learning, integration of academics and technology into the workplace-oriented class, project-based learning, and contextual learning. A laboratory section will be required. Limited to Workforce Education and Development students admitted to the teacher education program or one of the career and technical education alternative certification programs in workforce education. Restricted to WED majors or consent of department.

WED416A - Inst Methods-Business 416A-3 Instructional Methods in Career and Technical Education. Specific methods, techniques and materials to deliver instruction in (a) Business-accounting, basic business, economics, personal finance, marketing, entrepreneurship. This course requires an additional laboratory meeting time. Prerequisite: WED 413 or WED 462. Restricted to WED majors or consent of department.

WED416B - Inst Mthds-Busi Comp Sys, Etc. 416B-3 Instructional Methods in Career and Technical Education. Specific methods, techniques and materials to deliver instruction in (b)-Business-business computer systems, information processing, keyboarding. This course requires an additional laboratory meeting time. Prerequisite: WED 413 or WED 462. Restricted to WED majors or consent of department.

WED416C - Inst Mthds-Family/Consumer Sci 416C-3 Instructional Methods in Career and Technical Education. Specific methods, techniques and materials to deliver instruction in (c) Family & Consumer Sciences-nutrition, wellness, and hospitality. This course requires an additional laboratory meeting time. Prerequisite: WED 413 or WED 462. Restricted to WED majors or consent of department.

WED416D - Inst Mthds-F/C Sci-Liv Env/App 416D-3 Instructional Methods in Career and Technical Education. Specific methods, techniques and materials to deliver instruction in (d) Family & Consumer Sciences-living environments, apparel, and textiles. This course requires an additional laboratory meeting time. Prerequisite: WED 413 or WED 462. Restricted to WED majors or consent of department.

WED416E - Inst Mthds-Health Careers 416E-3 Instructional Methods in Career and Technical Education. Specific methods, techniques and materials to deliver instruction in (e) Health Careers. This course requires an additional laboratory meeting time. Prerequisite: WED 413 or WED 462. Restricted to WED majors or consent of department.

WED416F - Inst Mthds-Technology Educ 416F-3 Instructional Methods in Career and Technical Education. Specific methods, techniques and materials to deliver instruction in (f) Technology Education. This course requires an additional laboratory meeting time. Prerequisite: WED 413 or WED 462. Restricted to WED majors or consent of department.

WED420 - FCS Profession 420-3 Family and Consumer Sciences Profession. A social, psychological, and philosophical interpretation of family and consumer sciences in today's world. Examination of the profession's history, theory and foundation. Overview of career areas and identification of goals and

competencies which serve as a basis for decisions to prepare for a wide variety of business, education, and human services-related careers.

WED426 - Living Environ/Facility Plan 426-3 Living Environment and Facility Planning. This course is designed to provide students with resources, activities, and experiences to learn and prepare to teach principles and elements of design as applied to interior design of residential, commercial, and public space environments including textiles, furnishings, and color. Emphasis is on creating a more knowledgeable consumer with focus on project-based implementation and recognition of design principles.

WED427 - Resource Mgmt/Consumer Econ 427-3 Resource Management and Consumer Economics for Work and Life. Focus on utilizing resources and consumer information to address the diverse needs and goals of individuals in areas such as resource management, home ownership, and financial literacy.

WED460 - Occ Analysis & Curr Dev 460-3 Occupational Analysis and Curriculum Development. System approach to curriculum development. Includes analyzing occupations, specifying objectives and developing curriculum. Restricted to WED majors or consent of department.

WED461 - Workforce Educ Needs Assess 461-3 Workforce Education Needs Assessment. Overview of needs assessment and analysis procedures used in workforce education environments. Learners will design and develop needs assessment instruments, collect and diagnose data to identify those workplace performance issues requiring training solutions, and develop a formal report detailing needs assessment findings and training solution recommendations. Restricted to WED majors or consent of department.

WED462 - Instruct Methods & Materials 462-3 Instructional Methods and Materials. Instructional methods in occupational training program. Restricted to WED majors or consent of department.

WED463 - Assess Learner Performance 463-3 Assessment of Learner Performance. Development and use of evaluation instruments to assess student performance in training classrooms and laboratories. Criterion- and norm-referenced objectives, applications of taxonomies in development of written tests, performance tests and attitude measure. Restricted to WED majors or consent of department.

WED465 - The Human Resource Specialist 465-3 The Human Resource Specialist. This course provides an overview of the theoretical frameworks and practices related to human resource management and development. Examines the strategic alignment of human resource functions with organizational goals. Restricted to WED majors or consent of department.

WED466 - Foundations of Workforce Educ 466-3 Foundations of Workforce Education. Examination of the historical, social, economic and psychological foundations of workforce education. Nature and role of education and training in preparing people for the world of work. Restricted to WED majors or consent of department.

WED467 - Theory and Practice of HRD 467-3 Theory and Practice of HRD. Students will examine different factors that influence, direct and shape the functions of human resource development (HRD) in organizations. Topics include models, theoretical foundations, and philosophical perspectives with HRD, an overview of the HRD functions within organizations, and the various roles HRD can play within organizations. Restricted to WED majors or consent of department.

WED468 - Educ/Labor Force Linkages 468-3 Education/Labor Force Linkages. Attention given to the following areas: overcoming barriers to the linkage process; developing effective lines of communication; resource sharing; conducting joint problem solving with other agencies and individuals within the community; and jointly developing and providing programs and services. Restricted to WED majors or consent of department. Not for graduate credit.

WED469 - Training Systems Management 469-3 Training Systems Management. Insight and understanding of administration and management of organizational training. Principles and techniques of managing training organizations. Process of planning, organizing, marketing, programming, staffing, budgeting and evaluating a training organization. Restricted to WED majors or consent of department.

WED470 - Quality Systems Mgmt in Educ 470-3 Trends and Issues in Quality Systems Management in Education. This course provides an overview of the economic basis of and trends and issues relevant to Quality Systems Management in Education. The course examines compliance models and criteria models

for quality systems. Concentration will be on ISO 9000:2000 series model requirements with specific emphasis on internal audits, documentation, implementation and registration. Restricted to WED majors or consent of department.

WED472 - Organizing Cooperative Educ 472-3 Organizing Cooperative Education. Introduction to cooperative education including history, rational, legislation, goals and objectives. Programming, public relations and evaluation of cooperative education. Introduction of student selection and management of cooperative education programs. Fulfills three semester hours of six required for State of Illinois certification. Restricted to WED majors or consent of department.

WED473 - Coordinating Cooperative Educ 473-3 Coordinating Cooperative Education. Competencies required for coordination of cooperative education programs. Selection and maintenance of training stations, student placement, related instruction and program management. Fulfills the remaining three semester hours required for State of Illinois Certification. Restricted to WED majors or consent of department.

WED474 - Prepare Instructional Mtrls 474-3 Preparing Instructional Materials. Preparation of instructional materials needed by a student to attain a learning objective. Includes writing and developing various types of instruction sheets, presentation guides, knowledge tests and demonstration, practice and performance evaluation materials. Prerequisite: WED 460 completed with a grade of C or better or consent of the instructor.

WED486 - Adult Learning 486-3 Adult Learning. Course focus is on adult development and learning principles. Adult learning styles and motivation to learn are discussed in the context of designing effective instructional strategies appropriate in various workforce education venues. Restricted to WED majors or consent of department.

WED490 - Readings 490-1 to 4 Readings. Supervised reading for qualified students in Workforce Education and Development. Restricted to WED majors or consent of department. Special approval needed from the instructor.

WED491 - Advanced Occupational Skills 491-1 to 5 Advanced Occupational Skills. Modern occupational practice in selected fields for experienced professionals seeking advanced techniques. Restricted to WED majors or consent of department. Special approval needed from the instructor.

WED494 - Workshop 494-1 to 4 Workshop. Current workforce education issues for teachers, supervisors, and administrators. Emphasis of each workshop will be identified in workshop announcements. Restricted to WED majors or consent of department.

WED495 - Instructional Internship 495-3 to 12 Instructional Internship. Internship in approved education and/or training centers. Intern instructor will increasingly assume responsibilities for preparing, presenting and guiding occupational learning in workforce education and development. Not for graduate credit. Prerequisite: WED 462 and 12 semester hours in Workforce Education and Development. Restricted to WED majors or consent of department.

WED496 - Professional Internship 496-3 to 12 Professional Internship. Research, curriculum development or program management at approved education training sites. The intern will follow the program of a supervising professional in regular and related activities. For students in Workforce Education and Development. Not for graduate credit. Prerequisite: 12 semester hours in Workforce Education and Development. Restricted to WED majors or consent of department.

WED497 - Practicum 497-1 to 6 Practicum. Applications of work education skills and knowledge. Cooperative arrangements with corporations and professional agencies to study under specialist. Prerequisite: twenty hours in specialty. Restricted to WED majors or consent of department.

WED498 - Special Problems 498-1 to 6 Special Problems. Investigation of problems in workforce education and development. Restricted to WED majors and consent of department. Special approval needed from the instructor.

WED504 - Multimedia Prod for WED 504-3 Multimedia Production Technologies in Workforce Education. Application of multimedia technologies-graphics, text, video, audio, on-screen buttons and other event triggers--into workforce education delivery systems. Students will work as a team in

designing, developing, editing, and delivering interactive multimedia instructional training products. Prerequisite: WED 405. Restricted to WED majors or consent of department.

WED505 - Multimedia Delivery by Dist Ed 505-3 Multimedia Delivery of Workforce Education by Distance Learning. Focuses on the use of distance learning and multimedia technologies in the delivery of instruction of workforce education and development settings. Course participants will design and deliver instruction for the distance education environment-individually and in groups. Advanced video conference technologies are emphasized. Prerequisite: WED 404 or equivalent. Restricted to WED majors or consent of department.

WED511 - Inst Trends in WED Programs 511-3 Instructional Trends in Workforce Education Programs. Examination of research relating to instructional emphases and strategies unique to career and technical training programs, corporate training programs, and adult education. Restricted to WED majors or consent of department.

WED551 - Employment Law in HRD 551-3 Employment Law in Human Resource Development. Examines current and practical information in the area of employment law as it relates to human resource development in organizations. Focus is on helping organizations avoid liability through HRD interventions. Restricted to Workforce Education and Development majors or consent of department.

WED552 - Recruit, Select & Compensate 552-3 Recruitment, Selection & Compensation: Impact of HRD. Overview of the theoretical frameworks and practice related to recruitment, selection and compensation. Examines impact of these HR theories and practice on human resource development in organizations. Prerequisite: WED 465, The Human Resource Specialist. Restricted to WED majors or consent of department.

WED553 - Emerging Trends in HRD 553-3 Emerging Trends in HRD. Examination of current topics and research issues in the field of Human Resource Development not covered in other regularly scheduled courses. Emphasis will be on recent and present issues in the field, with topics and discussions focused on links between research and practice. Prerequisite: WED 465, The Human Resource Specialist. Restricted to WED majors or consent of department.

WED560 - Intro to WED Research 560-3 Introduction to Workforce Development Research. This course provides an exploration of the scope, values, and purposes of research in workforce development. Focus is on (a) identifying how theory and research are practical tools to solve workforce development challenges that practitioners face on a daily basis; (b) analyzing research articles, and (c) developing academic writing skills. Restricted to WED majors or consent of department.

WED561 - Research Methods 561-3 Research Methods. Basic research methods and techniques in the design, investigation and reporting of research studies relating to education for work. Prerequisite: WED 560. Restricted to WED majors or consent of department.

WED563 - Training Measuremnt/Evaluation 563-3 Training Measurement and Evaluation. Evaluation systems and activities for evaluating training programs. Application of research methods and data analysis in the human resource development process, with concentration on assessing trainee reaction and planned action, learning, skill, business impact and return on training investment. Prerequisite: WED 463. Restricted to WED majors or consent of department.

WED564 - Program Eval for WED 564-3 Program Evaluation for Work Education. Evaluation systems and activities for evaluating national, state, and local work education programs. Systems include programmatic accreditation and state agency evaluations. Activities include personnel, facilities, access and equity, community resources and community needs evaluations. Restricted to WED majors or consent of department.

WED566 - Administration & Supervision 566-3 Administration and Supervision. Nature, function, and techniques of administration and supervision of education for work programs at all levels. Restricted to WED majors or consent of department.

WED574 - Occupational Information 574-3 Occupational Information. The role of instructional and supervisory personnel in the total occupational information system. Kindergarten to adult. Restricted to WED majors or consent of department.

WED576A - Policy Implement & Supervise 576A-3 Policy Implementation and Supervision-Objective Program Planning, Leadership, Communications. Planning, implementing, and controlling local education agency components of state and federal occupational programs. Restricted to WED majors or consent of department.

WED576B - Policy Implement & Supervise 576B-3 Policy Implementation and Supervision-Management Information Systems, Financial Decisions, Staffing Patterns. Planning, implementing, and controlling local education agency components of state and federal occupational programs. Restricted to WED majors or consent of department.

WED581 - Workforce Diversity 581-3 Workforce Diversity. Foundational information concerning a diverse/multicultural society. Importance of understanding cultural and demographic similarities/differences and how this information relates to the workplace and to education/training environments. Social diversity issues of current importance to workforce preparation and development of diversity training are included. Restricted to WED majors or consent of department.

WED584 - Curriculum Found for Work Educ 584-3 Curriculum Foundations for Work Education. Acquaints students with different factors that influence, direct, and shape curriculum as it pertains to the work-oriented aspects of school and society. Topics include law and the curriculum, philosophies and organizational models, differing approaches by grade level and setting, and the development of work-related curriculum. Restricted to WED majors or consent of department.

WED585A - Seminar in WED-Fac Div Initvs 585A-3 Seminar in Workforce Education and Development-Facilitating Diversity Initiatives. A series of seminars for scholarly inquiry into significant aspects of Workforce Education and Development. Students will have opportunity to discuss issues in facilitating diversity initiatives. Restricted to WED majors or consent of department.

WED585B - Seminar in WED-Resrch-Practice 585B-3 Seminar in Workforce Education and Development-Workforce Education Research to Practice. A series of seminars for scholarly inquiry into significant aspects of Workforce Education and Development. Students will have opportunity to discuss issues in Workforce Education research to practice. Restricted to WED majors or consent of department.

WED585C - Seminar-WED-Discuss Tch/Train 585C-3 Seminar in Workforce Education and Development-Discussion as a Method of Teaching and Training Adults. A series of seminars for scholarly inquiry into significant aspects of Workforce Education and Development. Students will have opportunity to discuss issues in discussion as a method of teaching and training adults. Restricted to WED majors or consent of department.

WED585D - Seminar in WED-Job Stress 585D-3 Seminar in Workforce Education and Development-Job Stress. A series of seminars for scholarly inquiry into significant aspects of Workforce Education and Development. Students will have opportunity to discuss issues in job stress. Restricted to WED majors or consent of department.

WED585E - Seminar in WED-Work Motivation 585E-3 Seminar in Workforce Education and Development-Work Motivation. A series of seminars for scholarly inquiry into significant aspects of Workforce Education and Development. Students will have opportunity to discuss issues in work motivation. Restricted to WED majors or consent of department.

WED586 - Dev Prgm for Adult Learners 586-3 Developing Program for Adult Learners. Overview of current organizational patterns of adult programs and analysis of program delivery systems. Students will develop advanced skills in planning and designing programs for adults in workforce education environments. Prerequisite: WED 486. Restricted to WED majors or consent of department.

WED590 - Readings 590-1 to 9 Readings. Supervised readings in selected advanced subjects. Restricted to WED majors or consent of department. Special approval needed from the instructor.

WED591 - New Developments 591-1 to 9 New Developments. Recent developments and trends in various aspects of education for work. Instruction provided by recognized authorities. Restricted to WED majors or consent of department.

WED592 - Current Issues & Research 592-3 Current Issues and Research. Examination of broad topics, issues, and research not covered in other regularly scheduled courses. Emphasis will be on recent

and present issues, which are in the process of evolving. Content will be selected from three primary professional fields: (a) Vocational/technical education, (b) Employment and training, and (c) Career education. Required of all Ph.D. students. Restricted to WED majors or consent of department.

WED593 - Individual Research 593-3 Individual Research. The selection and investigation of a research topic culminating in a paper satisfying the research requirement for a Master of Science in Education degree. Prerequisite: WED 561. Restricted to Workforce Education and Development majors or consent of department.

WED594 - Advanced Research Methods 594-3 Advanced Research Methods. Development of research competencies and preparation of proposal for thesis or dissertation research. Familiarity with research in various foundation areas of education for work. Prerequisite: WED 592. Restricted to WED majors or consent of department.

WED595 - Professional Internship 595-1 to 16 Professional Internship. Supervised professional experience in appropriate educational settings. May be done on- or off-campus. Restricted to WED majors or consent of department.

WED597A - Doctoral Seminar 597A-1 Doctoral Seminar in Workforce Education-Orientation to Doctoral Study. Designed to provide doctoral students the opportunity to discuss and practice major professional roles in workforce education and development. Requirements of teaching, research, publication, and service are defined. Students will accomplish identified professional expectations in orientation to doctoral study. Restricted to admission to the Ph.D. in education program. Restricted to WED majors or consent of department.

WED597B - Doctoral Seminar 597B-1 Doctoral Seminar in Workforce Education-Research Publications and Presentations. Designed to provide doctoral students the opportunity to discuss and practice major professional roles in workforce education and development. Requirements of teaching, research, publication, and service are defined. Students will accomplish identified professional expectations in Research Publications and Presentations. Restricted to admission to the Ph.D. in education program. Restricted to WED majors or consent of department.

WED597C - Doctoral Seminar 597C-1 Doctoral Seminar in Workforce Education-Grantmanship. Designed to provide doctoral students the opportunity to discuss and practice major professional roles in workforce education and development. Requirements of teaching, research, publication, and service are defined. Students will accomplish identified professional expectations in grantmanship. Restricted to admission to the Ph.D. in education program. Restricted to WED majors or consent of department.

WED598 - Special Investigations 598-1 to 6 Special Investigations. Selection and investigation of a problem: use of relevant sources and techniques; collection and analysis, evaluation, interpretation of data, and the writing of a report of the investigation for students whose particular needs are not met by existing classes. Restricted to WED majors or consent of department. Special approval needed from the instructor.

WED599 - Thesis 599-1 to 6 Thesis. Prerequisite: WED 561. Restricted to WED majors or consent of department.

WED600 - Dissertation 600-1 to 36 (1 to 12 per semester) Dissertation. Restricted to WED majors or consent of department.

WED601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Restricted to WED majors or consent of department.

WED699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Workforce Education and Development Faculty

Aguirre, Jeanne, Visiting Assistant Professor, Emerita, Ph.D., Southern Illinois University, 1975.
Anderson, Garfield, Visiting Assistant Professor, Emeritus, Ed.D., Auburn University, 1976.
Anderson, Marcia, Professor, Emerita, Ph.D., Southern Illinois University, 1975.
Aydt, Roger, Visiting Assistant Professor, Emeritus, Ph.D., Southern Illinois University, 1987.
Bailey, Larry J., Professor, Emeritus, Ed.D., University of Illinois, 1968.
Barnett, Deborah, Lecturer, Ph.D., Southern Illinois University, 2015.
Blackstone, Glen, Senior Lecturer, Ph.D., Southern Illinois University Carbondale, 1985.
Bortz, Richard F., Professor, Emeritus, Ph.D., University of Minnesota, 1967.
Bourne, Shirley A., Visiting Assistant Professor, Emerita, Ph.D., Southern Illinois University, 1983.
Buila, Theodore, Associate Professor, Emeritus, Ph.D., Cornell University, 1968.
Davis, Marty S., Visiting Assistant Professor, Emerita, Ph.D., Southern Illinois University, 1995.
Dotzler, Robert J., Visiting Assistant Professor, Emeritus, Ph.D., George Washington University, 1987.
Eversden, Terre, Senior Lecturer, Ph.D., Southern Illinois University, 2001.
Gooch, Bill G., Professor, Emeritus, Ed.D., University of Tennessee, 1973.
Griffin, Keith H., Visiting Assistant Professor, Emeritus, Ph.D., Louisiana State University, 1977.
Hagler, Barbara, Professor and Interim Chair, Ph.D., Arizona State University, 1991.
Hall, M. Eugene, Visiting Assistant Professor, Emeritus, Ph.D., Ohio State University, 1982.
Hunter, Wallace D., Visiting Assistant Professor, Emeritus, Ph.D., The Florida State University, 1974.
Hunter-Johnson, Yvonne, Assistant Professor, Ph.D., University of South Florida, 2012.
L'Angelle, David, Visiting Assistant Professor, Emeritus, Ph.D., Ohio State University, 1983.
Lee, Robert, Senior Lecturer, Emeritus, M.B.A., City University-Washington, 1998.
Owens, Douglas, Senior Lecturer, M.S., Eastern Illinois University, 2003.
Plessman, Connie K., Visiting Assistant Professor, Emerita, Ph.D., University of Nebraska, 1985.
Putnam, Alvin R., Associate Professor, Emeritus, Ph.D., Oklahoma State University, 1978.
Reneau, Fred, Professor, Emeritus, Ed.D., Virginia Polytechnic Institute and State University, 1979.
Shields, Bill J., Assistant Professor, Emeritus, M.S. in Ed., Southern Illinois University, 1963.
Sidell, Charles, Visiting Assistant Professor, Emeritus, Ph.D., Southern Illinois University, 1999.
Sims, Cynthia, Associate Professor and Associate Dean Ed.D., Northern Illinois University, 2004.
Stadt, Ronald W., Professor, Emeritus, Ed.D., University of Illinois, 1962.
Stitt, Thomas R., Professor, Emeritus, Ph.D., Ohio State University, 1967.
Sullivan, James A., Professor, Emeritus, Ed.D., West Virginia University, 1967.
Taylor, David, Visiting Assistant Professor, Emeritus, Ed.D., Alliant International University, 2004.
Washburn, John S., Professor, Emeritus, Ed.D., and Interim Chair, University of Illinois, 1977.
Zhong, Lin, Assistant Professor, Ph.D., University of Southern Mississippi, 2015

Women, Gender, and Sexuality Studies

Women, Gender, and Sexuality Studies (WGSS), an interdisciplinary and transnational field of inquiry, explores the intersections of gender, sex, sexuality, race, class, nation, religion, and ability, and how these intersecting identities influence individuals' experiences, achievements, and positions in society. The WGSS program offers a critical cultural approach in its examination of all genders and sexualities through lenses of contemporary feminist and queer theories. Scholarship in Women, Gender, and Sexuality Studies is found in virtually every branch of academics, including the humanities, social sciences, sciences, education, and the arts. WGSS is a strong interdisciplinary program where students from every academic college on the SIUC campus can pursue their interests in issues regarding women, gender, sexuality, and/or feminisms, and also discover the relevance of Women, Gender, and Sexuality Studies to their own lives and their own fields of study.

A minor in Women, Gender, and Sexuality Studies offers an interdisciplinary complement to any undergraduate degree program. It is an appropriate minor for students planning graduate or professional studies. The minor also offers an emphasis in Sexual Diversity Studies. It is designed to enrich and extend a student's major field by enhancing awareness of the issues and theories associated with the study of gender, race, sexuality and social class. Students who wish to minor in WGSS take 18 semester hours of credit. Students must officially declare their minor to both their advisor and the Director of Women, Gender, and Sexuality Studies.

Minor in Women, Gender, and Sexuality Studies

Minors must be approved by the Director of Women, Gender, and Sexuality Studies in order to assist students in developing a coherent program that meets their individual interests. The minor requires 18 semester hours of credit, 15 of which must be in Women, Gender, and Sexuality Studies courses, while the remaining three hours may be selected from a special interest or related course - for example, from Africana Studies. Schedules of classes contain listings of relevant courses. The minor must include WGSS 201, WGSS 300 and WGSS 495. Elective courses should be taken from at least two different cross-listing departments. Students must discuss and plan their minors with the Director of Women, Gender, and Sexuality Studies or with a faculty member who teaches Women, Gender, and Sexuality Studies courses.

Minors in Women, Gender, and Sexuality Studies may elect an emphasis in Sexual Diversity Studies. This emphasis requires 18 semester hours of credit, which must include WGSS 201, WGSS 203, and WGSS 496. Students who choose this emphasis must plan their minor in consultation with the Director of Women, Gender, and Sexuality Studies or with a faculty member who teaches Sexual Diversity courses.

Minor in Women, Gender, and Sexuality Studies Degree Requirements

First Year: WGSS 201, 3 credits

Second Year: WGSS 300, 3 credits; WGSS electives*, 3 credits

Third Year: WGSS electives*, 6 credits

Fourth Year: WGSS 495, 3 credits

* Suggested WGSS electives include: WGSS 203, WGSS 303I, WGSS 396, WGSS 401, WGSS 403, WGSS 475, WGSS 492, and WGSS 496

Minor in WGSS, Sexual Diversity Studies Degree Requirements

First Year: WGSS 201, 3 credits

Second Year: WGSS 203, 3 credits; WGSS electives*, 3 credits

Third Year: WGSS electives*, 6 credits

Fourth Year: WGSS 496, 3 credits

*Suggested WGSS electives include: WGSS 300, WGSS 396, WGSS 437, WGSS 401, WGSS 403, WGSS 475, WGSS 492 and WGSS 495.

Women, Gender, and Sexuality Studies Courses

WGSS200 - Women in French Lit 200-3 Women in French and Francophone Literatures. (University Core Curriculum) (Same as FR 200) This course offers a study of the representation of women in 20th century French and Francophone literatures. The class will study female characters as they are represented in novels, short stories and essays of contemporary French and Francophone writers, and will analyze the development of women as characters from a psychological, sociological, and literary point of view. All readings and lectures are in English.

WGSS201 - Multicultural WGS 201-3 Multicultural Perspectives on Women, Gender and Sexuality. (University Core Curriculum) This interdisciplinary and multicultural survey course covers important issues of women, gender and sexuality studies in the United States. Topics include language, media, education, family, labor, politics, literature and the arts. Within each topic, issues of race, class, ability, and other intersecting aspects of identity are also addressed.

WGSS203 - Intro to SDS 203-3 Introduction to Sexual Diversity Studies. An interdisciplinary examination of sexual diversity, including discussion of major concepts and theories of sexual identity and sexual politics, application in various disciplines, and intersections with race, class, and ability.

WGSS223 - Women & Men Contemp Society 223-3 Women and Men in Contemporary Society. (University Core Curriculum) [IAI Course: S7 904D] (Same as SOC 223) Examines theories of women and men's roles in society. Surveys contemporary gender inequalities in the U.S. and developing countries. Special attention given to employment, race, sexual assault, feminist movements, alternative family/lifestyles and childrearing.

WGSS225 - Women in Literature 225-3 Women in Literature. (Advanced University Core Curriculum course) (Same as ENGL 225) [IAI Course: H3 911D] Examines the ways in which women are portrayed in literature, especially in twentieth-century novels, drama, short fiction, and poetry written by women. Prerequisite: ENGL 102 or ENGL 120. Satisfies University Core Curriculum Multicultural requirement in lieu of ENGL 205.

WGSS233 - Psych-Gender-Diverse Context 233-3 Psychology of Gender in Diverse Context. (Same as PSYC 233) (University Core Curriculum) The course examines how gender affects all aspects of our lives at the individual, societal and cultural levels. It will cover psychological theories and topics related to gender, and will examine issues of diversity, such as race/ethnicity, class, sexuality, disability and age as they interact with gender.

WGSS286 - Relationships & Family Dev 286-3 Intimate Relationships and Family Development. (Same as CI 227) (University Core Curriculum) [IAI Course: S7 902] This course will explore topics related to intimate relationships, including attraction, communication, dating, cohabitation, marriage and conflict. Study of changing patterns in family living throughout the family life cycle and the dynamic relationships within families. Students will critically evaluate current theory and research concerning the elements of family relationships.

WGSS298 - Multicultural Appld Experience 298-3 Multicultural Applied Experience Option. (University Core Curriculum) An applied experience, service-oriented credit in American diversity involving interaction with those exemplifying life experiences centering on women's issues, organizations, services, etc. Students should consult the Women, Gender and Sexuality Studies Program staff to discuss placement options and supervision. Special approval needed from the Women, Gender and Sexuality Studies Director. Not for graduate credit.

WGSS300 - Feminist Theories 300-3 Feminist Theories. This course is an introduction to feminist social and political theory. The course covers the definition of feminism and feminist theory, the development of multiple perspectives within social and historical contexts, and major debates within feminism. Prerequisite: WGSS 201 or consent of the instructor.

WGSS301I - Women in Sci Eng & Tech 301I-3 Women in Science, Engineering and Technology. (University Core Curriculum) This course will explore the historical contributions of women and challenges they faced as they entered educational programs and careers in various fields of engineering, science and technology. The course will also consider the current status of women in these fields.

WGSS302 - Women and Leadership 302-3 Women and Leadership: Government, Law and Business. This course will explore the contributions of women and challenges they faced entering politics, law, and business. The course will also consider the historical and current status of women in these fields. Emphasis varies by instructor.

WGSS303I - Women, Blues & Literature 303I-3 Women, Blues and Literature. (Same as AFR 303I, MUS 303I) (University Core Curriculum) Explores traditional aesthetic processes of the blues as a mode of self expression. Examines the images/voices projected by vaudeville blues women (1920's/30's), along with various manifestations/extensions instrumental and vocal, musical and literary-from fiction and poetry to jazz, R&B, and rap. In-depth analysis of blues music and literature.

WGSS304 - Women in the Arts 304-3 Women in Media, Literature, Art and Performance. This course will explore the contributions of women and challenges they have faced in the art world-visual, literary,

media and performance. The course will also consider the historical and current status of women in these fields. Emphasis varies with instructor.

WGSS307I - Women in the Visual Arts 307I-3 Women in the Visual Arts: Social and Educational Contexts. (Same as AD 307I) (University Core Curriculum) This interdisciplinary course examines women's lives as artists, visual representations of women, and issues of gender distinction in the history of Western art from the medieval period to the present. From perspectives that include social history and cultural anthropology as well as both traditional and feminist art history, the course considers the ways in which the experiences of women and opportunities available to them have historically differed from those of men. The course examines how such differences have affected the emphases, subject matter, and traditions of women's art as well as the ways in which women have been represented.

WGSS314 - Gender and Philosophy 314-3 Love, Sex, Gender and Philosophy. (Same as PHIL 314) A survey of philosophical approaches to love, sex, and gender. A philosophical inquiry into the representation of love, sex, and gender, including materials that combine text, words, and images. The course studies an ancient philosophy text on love, a classical text of twentieth-century feminist philosophy, and critiques of feminism that draw on the life of gender, sexuality, and race. It questions the nature and possibilities of love.

WGSS315 - Global Perspectives Sex Diversity 315-3 Global Perspectives on Sexual Diversity. (Same as SOC 307) This course explores sexual diversity within different hegemonic heterosexual cultures, worldwide. Using insight from historical and sociological analysis, the contemporary development of social movements for lesbians, gays, and bisexuals and their oppositional forces is analyzed, and consequent cultural changes that have resulted from the confrontation of these forces are examined.

WGSS320I - Language, Gender, Power 320I-3 Language, Gender and Power. (University Core Curriculum) (Same as LING 320I) This course looks at language practices and men and women from different cultures in terms of how speech reflects and shapes their social identities. Perspectives from the fields of linguistics, anthropology, psychology, sociology and speech communication will be used.

WGSS321 - Reproduction and Sexuality 321-3 Reproduction and Sexuality. (Same as PHSL 320) Comprehensive course examining the physiological basis of mammalian reproduction and the behavioral aspects of sexuality. Human sexuality and reproductive function is the primary focus. Topics include hormonal control, anatomy, ovulation, sexual response and behavior, fertilization, pregnancy and parturition. Human specific topics include reproductive medicine, STDs, paraphilias, birth control and infertility. Prerequisite: BIOL 200A or BIOL 211.

WGSS341 - Psychology of Women 341-3 Psychology of Women. (Same as PSYC 333) An examination of empirical evidence on the biological, psychological, and social functioning of women, describing women's roles, the genetic versus social determinants of women's behavior, and the implications for women's potential. Prerequisite: PSYC 102 or consent of instructor.

WGSS348 - Women and Gender History 348-3 Women and Gender History. (Same as HIST 324) Survey of women and gender history. Chronology and focal themes will vary with instructor.

WGSS356 - US Women's History 356-3 US Women's History. (Same as HIST 356) This course will survey the role of women in US history from colonial times to the present. Students will be introduced to contributions made by women to US society, politics, and cultures.

WGSS357 - Women and Work in the US 357-3 Women and Work in the United States. (Same as HIST 357) An introduction to the diversity of women's experiences as workers in the home, the household economy, and the labor market segregated by race, ethnicity and gender.

WGSS360 - American Rural History 360-3 American Rural History. (Same as HIST 360) An examination of America's rural history from the 17th to the 20th century, focusing especially on social and economic relationships and attitudes, the role of ethnicity and gender, environmental and technological issues, agrarian radicalism, and governmental activities.

WGSS396 - Special Topics SDS 396-3 Special Topics in Sexual Diversity Studies. Consideration of a topic of interest in sexual diversity studies not offered through regular course listings.

WGSS401 - Contemporary Feminisms 401-3 Contemporary Feminisms in Global Contexts. This course discusses theories and practices of third wave feminism from a national and global perspective. We will discuss ways third wave feminism is being talked about and understood by others and ourselves. The selected readings offer a range of voices and articulation of third wave feminism including United States, post-colonial, transnational, queer, multicultural, theoretical, and practical. The course is heavy on reading. By the end of this course students should be able to express their understanding of third wave feminism.

WGSS403 - Masculinity in the U.S. 403-3 Masculinity in the United States. This course is a readings-based seminar covering concepts of masculinity in the United States. The readings cover cultural as well as identity elements of what being a "man" means (and how that definition has changed over time and contexts), historical as well as contemporary understandings of masculinity.

WGSS406A - Gender/Family/Sex Pre-Mod Eur 406A-3 Gender, Family and Sexuality in Pre-Modern Europe. (Same as HIST 406A) A discussion of the history of the family, creation of gender roles and importance of sexuality from medieval times to the French Revolution.

WGSS406B - Gender/Family/Sex Mod Eur 406B-3 Gender, Family and Sexuality in Modern Europe. (Same as HIST 406B) From the French Revolution. A discussion of the history of family, creation of gender roles, and importance of sexuality from the French Revolution to the present. Fulfills the CoLA Writing-Across-the-Curriculum (WAC) requirement.

WGSS410 - Transcending Gender 410-3 Transcending Gender. (Same as ANTH 410L) How do humans become male and female in different societies? Can men become women and women become men? What other gender possibilities exist? Is male dominance universal? What are the sources of male and female power and resistance? Do women have a separate culture? What are the relationships between gender, militarism and war? These and other questions will be examined in cross-cultural perspective.

WGSS411 - Human Sexuality 411-3 Human Sexuality. (Same as PH 410) Provides detailed information on dimensions of sexuality; characteristics of healthy sexuality; anatomy and physiology; gender roles; relationships; sexually transmitted infections/diseases; contraceptive issues and concerns; sexual victimizations; and sexuality through the life cycle.

WGSS415 - Gender, Sexuality & Comm 415-6 (3,3) Topics in Gender, Sexuality, and Communication. (Same as CMST 415) An exploration of advanced theories and research in gender and sexuality from communication perspectives. Course may be repeated when topics vary.

WGSS416 - Black Feminist Thought 416-3 Black Feminist Thought as Theory and Praxis. (Same as AFR 416, CMST 416) Explore the roots, contemporary manifestations, and current embodiments of black feminist thought. Explore the works of black women to engage in critical thinking and thoughtful dialogue that positions the valuable knowledge, experiences and perspectives of women of color at the center of inquiry while simultaneously discovering spaces for multicultural alliances. Prerequisite: CMST 301I or CMST 341 or consent of instructor.

WGSS426 - Gender, Culture, Language 426-3 Gender, Culture and Language. (Same as ANTH 426 and LING 426) This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered communication.

WGSS437 - Lesbian and Gay History 437-3 Lesbian and Gay History in the Modern United States. (Same as HIST 437) This course explores the social, political, and cultural history of lesbians, gay men, and other sexual and gender minorities in the United States from the turn of the twentieth century to the present. Themes to be taken up in the class include: the emergence of heterosexuality and homosexuality as distinct categories of identity; the intersection between sexual identity and identities of race, class, gender, and ethnicity; the relationship between homosexuality and transgenderism; the movement for gay liberation; the creation of lesbian and gay urban and rural subcultures; representations of homosexuality in popular culture; anti-gay backlash; and AIDS.

WGSS438 - Women and the Law 438-3 Women and the Law. (Same as POLS 438) The course is an advanced seminar in public law with a focus on gender, law and society. The course will engage with issues in feminist legal practice and the development of legal theories regarding gender. We will interrogate the relationship between theory and practice and the ways in which feminist jurisprudence has taken shape in the dynamics of this relationship. POLS 114 and 230 recommended prerequisites.

WGSS440 - Queer Visual Culture 440-3 Queer Visual Culture. (Same as CP 469) Course discusses aspects of the aesthetics, history, theory and politics of media representations of gender and sexuality. Cultural texts from one or a combination of media forms, genres, historical periods, and platforms will inform the historical and theoretical consideration of media representations of gender and sexual variation with a special interest on their bearings upon the present moment. May be repeated if topics vary.

WGSS442 - Sociology of Gender 442-3 Sociology of Gender. (Same as SOC 423) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro level, in work and family roles, in social institutions, and at the global, cross-cultural level.

WGSS446 - Gender & Global Politics 446-3 Gender and Global Politics. (Same as POLS 456) An advance course examining gender systems and women's situations across cultures and countries. This course also studies the impact globalization has had on gender issues by looking at women's activism at international and transnational levels. Topics covered include women's political representation, gender and culture, women's social movements, gender and development, and gendered policy issues.

WGSS448 - Gender/Family Modern US Hist 448-3 Gender and Family in Modern US History. (Same as HIST 448) This course explores the history of gender and the family in the United States from the late 19th century to the present. Themes to be explored include: the family and the state, motherhood, race and family life, and the role of the "family" in national politics.

WGSS449 - Advanced Human Sexuality 449-3 Advanced Human Sexuality. (Same as PHSL 450) Advanced, comprehensive course intended to supplement and expand the critical examination of topics covered in PHSL 320, Reproduction and Sexuality. The objectives of this class are to examine the physiological and behavioral basis of human reproduction and sexuality. Examining how humans reproduce from a physiological perspective including all aberrations and clinically relevant dysfunctions, as well as, the spectrum of human sexual behaviors including typical and atypical sexual behavior, paraphilias and diversity of human relationships. Prerequisite: PHSL 320.

WGSS450A - Women in Music 450A-3 Women in Music. (Same as MUS 450A) Explores the creative contributions of women in music, examining women's participation across a range of genres, cultural/geographic areas, and time periods. Restricted to junior/senior/graduate music major or consent of instructor.

WGSS452A - Traditions Uppity Wmn's Blues 452A-3 Traditions of Uppity Women's Blues. (Same as AFR 452A and MUS 452A) Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conventions of gender and sexuality, racism, sexism, classism and homophobia. Restricted to junior/senior/graduate music major or consent of instructor.

WGSS456A - Feminist Philosophy 456A-3 Feminist Philosophy. (Same as PHIL 446A) A general survey of feminist theory and philosophical perspectives.

WGSS456B - Special Topics Fem Philosophy 456B-3 Special Topics in Feminist Philosophy. (Same as PHIL 446B) A special area in feminist philosophy explored in depth, such as Feminist Ethics, French Feminism, Feminist Philosophy of Science, etc.

WGSS456C - Women Philosophers 456C-3 Women Philosophers. (Same as PHIL 446C) Explores the work of one or more specific women philosophers, for example Hannah Arendt, Simone DeBeauvoir, etc.

WGSS464 - Audio Documentary & Diversity 464-3 Audio Documentary & Diversity. (Same as RTD 464) The purpose of this course is the creation of short and long form audio documentaries by students, regardless of production background. It will introduce students to basic production techniques and

diversity considerations during the making of a documentary. This course uses qualitative methods to investigate an issue or document an event, with an emphasis on observation and interview techniques. Topics will explore the role of gender, race, ethnicity and class during the planning, gathering and production stages of the documentary. Course open to non-majors. Lab fee: \$55.

WGSS465 - History of Sexuality 465-3 History of Sexuality. (Same as HIST 465) Comprehensive survey of sexuality from the early modern period to the present. Examines social trends, politics, and cultural debates over various forms of sexuality. Students will engage in discussion, research, and writing. Emphasis varies by instructor.

WGSS470 - College Student Sexuality 470-3 College Student Sexuality. (Same as EAHE 470) Seminar designed to provide students with a strong grounding in the field of college student sexuality and sexual identity, covering the lived experiences of U.S. college students, the construction of sexualized collegiate identities through U.S. history, and how institutions of higher education have attempted to regulate, control, and (intentionally as well as inadvertently) effect college student sexuality.

WGSS475 - College Student Masculinities 475-3 College Student Masculinities. A readings-based seminar covering theories and concepts of masculinity as demonstrated by collegiate men in the United States. The readings in this course cover cultural as well as identity elements of what being a "college man" means (and how that definition has changed over time and contexts). The readings cover historical, theoretical and empirical research on collegiate men and masculinity. Prerequisite: WGSS 403 or consent of the instructor.

WGSS476 - Women, Crime, and Justice 476-3 Women, Crime, and Justice. (Same as CCJ 460 and SOC 461) A study of women as offenders, as victims, and as workers in the criminal justice system.

WGSS489 - Women State Religion-Mid East 489-3 Women, State and Religion in the Middle East. (Same as HIST 489) Following an introduction to the question of women in Islamic law and Islamic History, this course will examine the changing status and experiences of women in a number of Middle Eastern countries in the 20th century, focusing on Egypt, Iran, and Turkey. Major themes will include legal, social and political rights, participation in social and economic life, cultural and literary production, and recent secular and Islamist women's movements.

WGSS490 - Readings 490-1 to 6 Readings. Supervised readings in selected content areas of Women, Gender and Sexuality Studies. Special approval needed from the instructor and Director of Women, Gender and Sexuality Studies.

WGSS491 - Special Topics 491-1 to 6 Special Topics. Concentration on a topic of interest not offered through the regular course listings.

WGSS492 - Women and Religion 492-3 Women and Religion. This course will heighten and strengthen student's awareness of the roles and responsibilities of women as outlined in the sacred writings and scriptures of various world religions and as carried out in various cultures around the world.

WGSS493 - Individual Research 493-2 to 6 Individual Research. Exploration of a research project under the supervision of a faculty member having graduate faculty status. The project must result in a written research report, which is filed with the Director of Women, Gender and Sexuality Studies. Restricted to senior standing. Special approval needed from the instructor and Director of Women, Gender and Sexuality Studies.

WGSS494 - Practicum 494-1 to 6 Practicum. Supervised practical experience in situations centering on women's issues, organizations, services, etc. The setting may be in one's own field of study or in general content areas recognized in the Women, Gender and Sexuality Studies program. Special approval needed from the instructor and Director of Women, Gender and Sexuality Studies.

WGSS495 - WGSS Student Seminar 495-3 Women, Gender & Sexuality Studies Student Seminar. A synthesizing experience for individuals minoring or interested in Women, Gender and Sexuality Studies. This course will reflect a synthesis of student learning to include an overview of feminist methodologies to be explored as a ground for a final project that can be a research paper, community service experience, or creative project. This project will be formulated, implemented, reflected upon, and written about. This course can serve as a mini-capstone experience for WGSS students. Syllabus and topics will vary

according to student and instructor interests. Prerequisite: WGSS 201 or special approval from the Director of Women, Gender and Sexuality Studies.

WGSS496 - Adv Special Topics in SDS 496-3 Advanced Special Topics in Sexual Diversity Studies. Advanced consideration of a topic of interest in Sexual Diversity Studies not offered through regular course listings.

WGSS497 - Independent Study in SDS 497-3 Independent Study in Sexual Diversity. Supervised readings in selected content areas in Sexual Diversity Studies. This is a capstone, synthesizing experience for students in sexual diversity studies. Prerequisites: WGSS 201, 203. Special approval needed from the instructor.

WGSS507 - Sociology of Sexuality 507-3 Seminar in the Sociology of Sexuality. (Same as SOC 507) Examines the emerging body of work in the fast-growing field of sexuality studies. While the course focuses on sociological research, it takes a few side trips into other disciplines. We begin by discussing the evolution of theory and methodology in the sexual sciences. After briefly considering the contributions of early sexologists and the work of Sigmund Freud, we will survey the sociology of sexuality from its beginnings in quantitative research, through classical sociological theory, social constructionism, and feminism. We'll then examine Foucault's radical rethinking of sexuality and grapple with the challenges of queer theory. The second part of the course will take up several substantive areas in the sociology of sexuality, drawing on cutting edge quantitative and qualitative research.

WGSS515 - Studies Gender Sexuality Comm 515-3 to 9 (3,3,3) Studies in Gender, Sexuality, and Communication. (Same as CMST 515) How communicative activity creates and sustains human beings as gendered. Emphasis on gaining familiarity with contemporary research on gendering from a particular perspective (e.g., ethnography, performance, phenomenology, quantitative methods, rhetorical criticism). May be repeated when perspective varies. Perspective announced prior to each offering.

WGSS525 - Theorizing the Body 525-3 Theorizing the Body. (Same as ANTH 525) This seminar explores a broad range of theoretical readings centering on the human body. Once the province of medical science and certain schools of philosophy, recent research in the social sciences and the humanities position "the body" as a primary site of socialization, gendering, social control.

WGSS535 - Seminar: Gender in Higher Ed 535-3 Seminar: Gender in Higher Education. (Same as EAHE 535I) A seminar for specialized study of administrative practice and policy in gender in higher education.

WGSS544 - Sociology of Gender 544-3 Sociology of Gender. (Same as SOC 544) Examines major theories, themes, and research methods on the intersection of gender, race, class and sexuality. Topics may include: construction of gender, race, class and sexual identities; work; social movement; intersection of family and work; parenting and reproduction; historical and cross-national dimensions.

WGSS545 - Gender and Work 545-3 Gender and Work. (Same as SOC 545) This course is designed to investigate how gender structures the workplace, as well as how men and women both reproduce and negotiate gender at work. Focusing on select topics, we will develop an understanding of workplaces as gendered organizations and discuss sex segregation, wage inequality, the glass ceiling, the glass escalator, sex work, men and women in nontraditional occupations, the body at work, emotional labor, aesthetic labor, immigration and work, globalization, and unemployment and welfare. Also, this class will take an intersectional approach to analyzing and discussing issues of gender inequality at work; meaning, we will take seriously how gender intersects with race, ethnicity, class, and sexuality to shape both inequality and resistance at work.

WGSS546 - Language, Gender, Sexuality 546-3 Language, Gender and Sexuality: Anthropological Approaches. (Same as ANTH 546, LING 545) This course examines the study of language in society with a particular focus on how linguistic practices are part of the construction of gender and sexuality identities, ideologies, social categories and discourses. Anthropological theories applied to the study of language, gender and sexuality will be covered along with a variety of methodological approaches.

WGSS547 - Gender and Social Change 547-3 Gender and Social Change. (Same as SOC 547) This graduate seminar is a sociology of gender course that focuses on changes in the subfield itself and in peoples' lived experiences in terms of gender, gender relations, and gender stratification. Readings and

discussions will trace the development of the sociology of gender over the last several decades. We will discuss how ideas and theories have changed over the years including changes in concepts and in how sociologists define, problematize, and theorize about sex and gender as traits, identities, relations, structures, and systems. We will also explore 'objective' or actual change (or lack of change) related to gender in individuals, groups, and societies.

WGSS550 - Psych Construction Gender 550-3 The Psychological Construction of Gender. (Same as PSYC 550) This course will focus on the psychology of gender within a feminist perspective and using a feminist approach. The term feminism, as used here, primarily implies that we will consider information and ideas for more diverse than simple empirical data. In our reading and discussion, we will consider politics, discrimination, the history of science, the history of patriarchy, the development of theory and ideas in general and the development of feminism in particular, and objective versus subjective views of science, and within these contexts, we will consider and study the psychology of gender.

WGSS560 - Gender and Sport 560-3 Gender and Sport: Sociological and Psychological Perspectives. (Same as KIN 560) This course explores psychological and sociological dimensions underlying the concept of gender and critically examines how gender relates to sport and physical activity. Students will be introduced to non-traditional as well as traditional research that addresses the issue of gender in various physical activity contexts.

WGSS565 - Continental Feminist Philosophy 565-3 Continental Feminist Philosophy. (Same as PHIL 565) An examination of major figures and problems in continental feminism, focusing on metaphysical, ethical, political, and aesthetic theories in the works of Beauvoir, Kristeva, Irigaray, Butler, and Kofman.

WGSS575 - Women in Higher Education 575-3 Women in Higher Education. (Same as EAHE 575) The goal of this course is to provide an overview of women in higher education. Topics that will be considered are: feminism's impact of women in higher education; the division of labor for women (including faculty and professional staff positions); historical and sociological perspectives of access to higher education including curriculum and pedagogy.

WGSS576 - College Men/Masculinities 576-3 College Men and Masculinities. (Same as EAHE 576) This course is a readings-based seminar covering concepts of masculinity as demonstrated by collegiate men in the United States. The readings in this course cover cultural as well as identity elements of what being a "college man" means (and how that definition has changed over time and contexts). The readings consist of historical, contemporary and theoretical scholarship concerning collegiate masculinity.

WGSS590 - Readings 590-1 to 3 Readings. Supervised readings in selected advanced subjects. Special approval needed from the instructor and the Director of Women, Gender and Sexuality Studies.

WGSS591 - Special Topics 591-1 to 3 Special Topics. Concentration on a topic of interest not offered through the regular course listings. Special approval needed from the instructor and the Director of Women, Gender and Sexuality Studies.

WGSS592 - Women and Religion 592-3 Women and Religion. This course will heighten and strengthen student's awareness of the roles and responsibilities of women as outlined in the sacred writings and scriptures of various world religions and as carried out in various cultures around the world.

WGSS593 - Masculinity in the U.S. 593-3 Masculinity in the United States. This course is a readings-based seminar covering concepts of masculinity in the United States. The readings cover cultural as well as identity elements of what being a "man" means (and how that definition has changed over time and contexts), historical as well as contemporary understandings of masculinity.

WGSS595 - Practicum in WGSS 595-1 to 3 Practicum in Educational Women, Gender and Sexuality Studies. This course provides students with supervision in their work toward course development in Women, Gender and Sexuality Studies. The instructor of record will meet with practicum members on a regular basis, and, together, they will work towards the research and syllabus construction necessary for a WGSS course. Pedagogical strategies will also be covered. Must have consent of the Director of Women, Gender and Sexuality Studies. Graded by S/U only.

WGSS596 - Feminist Theories 596-3 Advanced Feminist Theories. This course introduces students to the past, present, and potential future of feminism and its various permutations. Readings are designed

to stress historical, intellectual, and contemporary issues in order to inspire in-class discussion and to provide foundations for written assignments. Emphasis varies by instructor.

WGSS597 - Pro-Seminar 597-3 Graduate Pro-Seminar in Women's Gender and Sexuality Studies. This proseminar introduces graduate students to the field of Women, Gender, and Sexuality Studies (WGSS). The approach is both interdisciplinary as well as multidisciplinary. The course guides students through a process by which they build a detailed map of the intersection between their course of study and the field of WGSS. Emphasis varies by instructor.

Zoology

A major in Zoology is an appropriate beginning for those planning careers in teaching, research, or other employment in animal biology, environmental biology, fisheries biology, veterinary medicine, or wildlife biology. Students majoring in Zoology are required to develop an individualized curriculum in consultation with a faculty advisor within the department.

A student majoring in Zoology may work toward either a Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) degree. The B.A. with a major in Zoology provides the opportunity for a broad, liberal arts education by allowing students to take 20-25 hours of courses in areas of interest outside the major. The B.A. is appropriate for students who desire a strong background in zoology, but have interests in biology-associated careers in business, law, journalism, zoo keeping, or other fields.

Students seeking a B.S. with a major in Zoology must choose one of five specializations: animal biology, environmental biology, fisheries biology and aquatic conservation, pre-veterinary science, or wildlife biology and conservation. The B.S. requires more courses in physical sciences and mathematics than does the B.A., and is appropriate for students planning careers as practicing zoologists in one of the emphasized fields, particularly those who wish to pursue graduate studies. Each B.S. student will complete an independent-study project under the supervision of their faculty mentor, submit a written summary of the project, and present their results as part of ZOOL 482 (Senior Seminar), to be taken during the final year of study.

To prepare for a major in Zoology at SIU Carbondale, students should have a solid high school background in biology, mathematics, and physical sciences, as well as practiced writing skills and a sustaining curiosity about animal life. Students transferring to SIU after two years at a community college should have completed introductory biology, introductory chemistry, and pre-calculus sequences.

Zoology majors must take ZOOL 215 (Sophomore Seminar) immediately after completing BIOL 211 and BIOL 213, or (for transfer students) during the first semester of enrollment at SIU. ZOOL 215 provides students with an orientation to the department and requirements of the major, and assigns them faculty advisors who will act as mentors until graduation.

B.A. and B.S. degrees require a minimum of 41 semester hours of biology or zoology courses. No more than 11 semester hours of biology or zoology courses that are used to satisfy degree requirements for another major may be used to meet the Zoology requirements.

SIU has an affiliate agreement with the University of Southern Mississippi's Gulf Coast Research Laboratory (GCRL). Qualified students can enroll in credit-bearing courses at GCRL with credits articulating as free electives in Zoology at SIU.

Bachelor of Arts Degree in Zoology, College of Science

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39

Degree Requirements	Credit Hours
College of Science Academic Requirements	7-9
Biological Sciences: completed with the Zoology major Mathematics: MATH 108 and MATH 109, or MATH 111 or MATH 141 or MATH 150 Physical Sciences: completed with the Zoology major. Supportive Skills: at least six credit hours chosen from QUAN 402 or MATH 282 or PLB 360 or ZOOL 360; CS 105 or CS 200B, CS 201 or CS 202; ENGL 290 or ENGL 291; any two-semester sequence of a foreign language (Chinese, French, Latin, German, Greek, Japanese, Spanish) ²	
Requirements for Major in Zoology	54-56
BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, and BIOL 307 CHEM 200, CHEM 201, CHEM 202 CHEM 210, CHEM 211 and CHEM 212; or GEOL 220 and GEOL 223; or GEOL 221 and GEOL 224; or PHYS 203A, PHYS 253A ZOOL 215 and ZOOL 220 20 hours of 300-and 400- level Biology or Zoology courses. One of the following quantitative skills courses: QUAN 402 or MATH 282 or ZOOL 360 CS 201 or CS 202 MATH 141 or MATH 150 ³	
Electives	16-21
Total	120

1 A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

2 The foreign language requirement can also be met by one of the following: (a) earning eight hours of 100-level credit in one language by proficiency examination; (b) completing three years of one language in high school with no grade lower than C.

3 A grade of C or better in ZOOL 220 is required for completion of the Zoology B.A. BIOL 304, BIOL 305, and BIOL 307 are required courses and may not be used as electives. A maximum of three credit hours of ZOOL 491, ZOOL 492, and ZOOL 493 together may be used as Zoology electives. Courses used to satisfy College of Science requirements may not be used to satisfy the quantitative skills requirement of the major. Only one of MATH 282, QUAN 402, and ZOOL 360 may be counted toward the supportive skills or major requirements.

Bachelor of Science Degree in Zoology (Animal Biology Specialization) Degree Requirements

The Animal Biology specialization is designed for students who wish to obtain a broad background in zoology, but especially those contemplating graduate studies of animal behavior, biodiversity, evolution, natural history, or systematics.

Animal Biology Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
College of Science Academic Requirements	7-9
Biological Sciences: completed with the Zoology major	
Mathematics: MATH 108 and MATH 109, or MATH 111	
Physical Sciences: completed with the Zoology major.	
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOOL 360; ENGL 290 or ENGL 291 or ENGL 391, or JRNL 310	
Requirements for Major in Zoology	68-72
BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, BIOL 306, BIOL 307, and BIOL 409 ²	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, and CHEM 212	
CHEM 340, CHEM 341, CHEM 350, and CHEM 351; or GEOL 220, GEOL 221, GEOL 223, and GEOL 224; or PHYS 203A, PHYS 203B, PHYS 253A, and PHYS 253B	
CS 200B or CS 201 or CS 202	
MATH 139 or MATH 141 or MATH 150	
ZOOL 215, ZOOL 220, and ZOOL 482 ³	
At least one credit hour of ZOOL 491, ZOOL 492, ZOOL 493, ZOOL 496, or ZOOL 497 ⁴	
At least 15 hours from the following: BIOL 306; ZOOL 320, ZOOL 385, ZOOL 405, ZOOL 407, ZOOL 408, ZOOL 409, ZOOL 410, ZOOL 413, ZOOL 414, ZOOL 415, ZOOL 418, ZOOL 425, ZOOL 426, ZOOL 433, ZOOL 434, ZOOL 435, ZOOL 438, ZOOL 444, ZOOL 450, ZOOL 461, ZOOL 465, ZOOL 467, ZOOL 471, ZOOL 472, ZOOL 473, ZOOL 478, ZOOL 490, ZOOL 491, ZOOL 492, ZOOL 493. ⁵	
Electives	0-6
Total	120

¹ A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

² A minimum grade of C is required in these courses for completion of the Animal Biology specialization.

³ A minimum grade of C is required in these courses for completion of the Animal Biology specialization.

⁴ Enrollment in these independent study courses must be coordinated and approved by a faculty mentor.

5 A maximum of three credit hours of ZOOL 491, ZOOL 492, and ZOOL 493 together may be used as Zoology electives.

Bachelor of Science Degree in Zoology (Environmental Biology Specialization), College of Science

The Environmental Biology specialization is designed for students interested in biological approaches to the study of environmental quality. Students in this program should also consider the Environmental Studies minor.

Environmental Biology Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
College of Science Academic Requirements	7-9
Biological Sciences: completed with the Zoology major	
Mathematics: MATH 108 and MATH 109, or MATH 111	
Physical Sciences: completed with the Zoology major	
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOOL 360; ENGL 290 or ENGL 291 or ENGL 391, or JRNL 310	
Requirements for Major in Zoology	70-71
BIOL 211, BIOL 212, BIOL 213, BIOL 305, BIOL 307, BIOL 409 ²	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212, CHEM 340, CHEM 341	
MATH 139 or MATH 141 or MATH 150	
ZOOL 215, ZOOL 220, ZOOL 410, ZOOL 411, ZOOL 432, ZOOL 433 or ZOOL 434, and ZOOL 482 ³	
At least 12 hours from the following Zoology electives: BIOL 304; ZOOL 351, ZOOL 415, ZOOL 426, ZOOL 435, ZOOL 438, ZOOL 443, ZOOL 444, ZOOL 445, ZOOL 458, ZOOL 490, ZOOL 491, ZOOL 492, ZOOL 493 ⁴	
At least 6 hours from the following environmental science electives: CHEM 350 and CHEM 351; CSEM 240; FOR 429; GEOG 310I, GEOG 320, GEOG 330, GEOG 401, GEOG 404, GEOG 422, GEOG 424, GEOG 426, GEOG 430, GEOG 434, GEOG 439, GEOG 471; GEOL 220 and	

Degree Requirements	Credit Hours
GEOL 223, GEOL 221 and GEOL 224, GEOL 222 and GEOL 223; MICR 301; PHSL 310; PLB 438, PLB 440, PLB 443, PLB 444, PLB 452	
Electives	1-4
Total	120

1 A total of 12 hours of biological science, mathematics, and physical science coursework is accounted for in the University Core Curriculum

2 A minimum grade of C is required in BIOL 211, BIOL 212, BIOL 213, BIOL 305, and BIOL 307 for completion of the Environmental Biology specialization.

3 A minimum grade of C is required in ZOOL 220 for completion of the Environmental Biology specialization.

4 A maximum of three credit hours of ZOOL 491, ZOOL 492, and ZOOL 493 together may be used as Zoology electives.

Bachelor of Science Degree in Zoology (Fisheries Biology and Aquatic Conservation Specialization), College of Science

Fisheries Biology and Aquatic Conservation Specialization is designed for students whose primary interest is in the ecology and management of fishes and aquatic ecosystems. This emphasis is appropriate for those with career goals involving fisheries management, aquaculture, aquatic ecosystem management, or graduate studies in applied fish biology.

Fisheries Biology and Aquatic Conservation Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
College of Science Academic Requirements	7-9
Biological Sciences: completed with the Zoology major	
Mathematics: MATH 108 and MATH 109, or MATH 111	
Physical Sciences: completed with the Zoology major	
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOOL 360; ENGL 290 or ENGL 291 or ENGL 391, or JRNL 310	
Requirements for Major in Zoology	68-70
BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, BIOL 307, and BIOL 409 ²	

Degree Requirements	Credit Hours
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, and CHEM 212	
CHEM 340, CHEM 341, CHEM 350, and CHEM 351; or PHYS 203A, PHYS 203B, PHYS 253A, and PHYS 253B	
MATH 141 or MATH 150	
ZOOL 215, ZOOL 220, ZOOL 415, ZOOL 465, ZOOL 466, ZOOL 477, and ZOOL 482 ³	
At least 9 hours from the following: ZOOL 320, ZOOL 385, ZOOL 414, ZOOL 418, ZOOL 426, ZOOL 433, ZOOL 434, ZOOL 458, ZOOL 473, ZOOL 490, ZOOL 491, ZOOL 492, ZOOL 493 ⁴	
Electives	2-8
Total	120

1 A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

2 A minimum grade of C is required in BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, and BIOL 307 for completion of the Fisheries Biology and Aquatic Conservation Specialization.

3 A minimum grade of C is required in ZOOL 220 for completion of the Fisheries Biology and Aquatic Conservation Specialization.

4 A maximum of three credit hours of ZOOL 491, ZOOL 492, and ZOOL 493 together may be used as Zoology electives.

Bachelor of Science Degree in Zoology (Pre-Veterinary Science Specialization), College of Science

The Pre-Veterinary Science specialization is designed for Zoology majors planning to enter veterinary school. Students in this program must register with the College of Science Pre-Health Professions Advisement Office.

Pre-Veterinary Science Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
College of Science Academic Requirements	7-9
Biological Sciences: completed with the Zoology major	
Mathematics: MATH 108 and MATH 109, or MATH 111	

Degree Requirements	Credit Hours
Physical Sciences: completed with the Zoology major	
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOOL 360; ENGL 290 or ENGL 291 or ENGL 391, or JRNL 310	
Requirements for Major in Zoology	71-72
BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, BIOL 306 and BIOL 409 ²	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212, CHEM 340, CHEM 341, CHEM 350 and CHEM 351	
CS 200B or CS 201 or MATH 139 or MATH 141	
PHYS 203A, PHYS 203B, PHYS 253A, and PHYS 253B	
ZOOL 215, ZOOL 220, and ZOOL 482 ³	
At least nine hours of zoology electives from the following: ZOOL 320, ZOOL 407, ZOOL 409, ZOOL 413, ZOOL 418, ZOOL 426, ZOOL 432, ZOOL 433, ZOOL 434, ZOOL 438, ZOOL 440, ZOOL 461, ZOOL 467, ZOOL 471, ZOOL 478, ZOOL 491, ZOOL 492, ZOOL 493 ⁴	
At least six hours of pre-vet electives from the following: ANS 337; BIOL 307; MICR 301, MICR 302, MICR 403, MICR 460; PHSL 310, PHSL 410A, PHSL 410B, PHSL 430	
Electives	0-1
Total	120

1 A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

2 A minimum grade of C is required in BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, and BIOL 306 for completion of the Pre-Veterinary Science specialization.

3 A minimum grade of C is required in ZOOL 220, for completion of the Pre-Veterinary Science specialization.

4 A maximum of three credit hours of ZOOL 491, ZOOL 492, and ZOOL 493 together may be used as Zoology electives.

Bachelor of Science Degree in Zoology (Wildlife Biology and Conservation Specialization), College of Science

The Wildlife Biology and Conservation Specialization is designed for students whose primary interests are in wildlife ecology, management, and conservation. Course requirements in this track include those specified by The Wildlife Society's certification program.

Wildlife Biology and Conservation Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements ¹	39
College of Science Academic Requirements	7-9
Biological Sciences: completed with the Zoology major	
Mathematics: MATH 108 and MATH 109, or MATH 111	
Physical Sciences: completed with the Zoology major	
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOOL 360; ENGL 290 or ENGL 291 or ENGL 391, or JRNL 310	
Requirements for Major in Zoology	70-72
BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, and BIOL 307 ²	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212	
MATH 139 or MATH 141 or MATH 150	
CSEM 240; PHYS 203A and PHYS 253A	
ZOOL 215, ZOOL 220, ZOOL 410, ZOOL 468, and ZOOL 482 ³	
Three hours of policy from the following: CMST 412; FOR 325; GEOG 422, GEOG 426, GEOG 471; ZOOL 464	
Three hours of management from the following: FOR 405, FOR 451; ZOOL 445, ZOOL 462A and ZOOL 462B, ZOOL 469 ⁴	
Six hours of wildlife biology from the following: ZOOL 408, ZOOL 461, ZOOL 462A and ZOOL 462B, ZOOL 467, ZOOL 478 ⁵	

Degree Requirements	Credit Hours
At least three hours of zoology electives from the following: ZOO 320, ZOO 385, ZOO 407, ZOO 408, ZOO 413, ZOO 414, ZOO 418, ZOO 433, ZOO 434, ZOO 461, ZOO 462A, ZOO 462B, ZOO 465, ZOO 466, ZOO 467, ZOO 469, ZOO 471, ZOO 478, ZOO 491, ZOO 492, ZOO 493 ⁶	
At least three hours of plant systematics from the following: FOR 202, PLB 300, PLB 304, PLB 449, PLB 451 ⁷	
At least three hours of botany from the following: FOR 201; PLB 300, PLB 320, PLB 400, PLB 415, PLB 440, PLB 443, PLB 445 ⁸	
Electives	0-4
Total	120

1 A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

2 A minimum grade of C is required in BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305 and BIOL 307 for completion of the Wildlife Biology and Conservation specialization.

3 A minimum grade of C is required in ZOO 220 for completion of the Wildlife Biology and Conservation specialization.

4 No course duplications are allowed between elective categories. A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

5 No course duplications are allowed between elective categories. A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

6 No course duplications are allowed between elective categories. A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

7 No course duplications are allowed between elective categories. A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

8 No course duplications are allowed between elective categories. A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

Zoology Minor

A minor in Zoology consists of BIOL 211, BIOL 212, BIOL 213, ZOO 220, and 12 hours of ZOO courses suitable for majors. One course from BIOL 304, BIOL 305, BIOL 306, BIOL 307, and BIOL 409 may also be counted toward the 12-hour requirement, but no University Core Curriculum courses may be included.

Honors Program

An honors program is available to those juniors and seniors in zoology who maintain a grade point average of 3.25 or better, overall and in the major. To enroll in Zoology 493, the student must complete a departmental form that requires the project title; a description of the proposed project; and the signatures of the student, the faculty advisor, and the chair of the department. The student must complete six hours of 493 with a grade of B or better, file with the department a final report on the research, and present the results at a public seminar in order to graduate with departmental honors in zoology. At the time

of graduation, an indication of participation in the program is made on the diploma and transcript for students who complete the requirements. Concurrent participation in the University Honors Program is encouraged.

Zoology Courses

ZOOL115 - General Biology 115-3 General Biology. (Same as PLB 115) (University Core Curriculum) [IAI Course: L1 900L] Introduction to fundamental biological concepts for non-life science majors interested in learning about interrelationships of human, plant and animal communities. Integrated lecture and laboratory cover topics that include structure and function of living systems, reproduction and inheritance, evolution, biological diversity and environmental biology. Laboratory applies scientific methods to the study of living systems. Laboratory/field trip fee: \$15.

ZOOL118 - Principles of Animal Biology 118-4 Principles of Animal Biology. (Advanced University Core Curriculum course) [IAI Course: L1 902L] Introduction to the basic concepts of animal biology including chemical organization of protoplasm; organization of matter into cells, tissues, organs and organ systems; classification and distribution of animals; ecology; heredity and organic evolution; economic biology and conservation, and animal behavior. Credit may not be used toward a major in zoology. Three lecturers and one 2-hour laboratory per week. Prerequisite: high school biology. Laboratory fee: \$30.

ZOOL215 - Sophomore Seminar Zoology 215-1 Sophomore Seminar in Zoology. Development of the skills and background knowledge required to be a modern zoologist. Students will receive an orientation to the Zoology Department and the requirements of their major, be assigned a faculty advisor, introduced to philosophy of science, critical thinking, and scientific literature, and learn the basics of scientific writing and oral presentation. One meeting per week. Prerequisites: BIOL 200A and BIOL 200B, or BIOL 211 and BIOL 212, or BIOL 211 and BIOL 213, or BIOL 212 and BIOL 213, with grades of C or better.

ZOOL220 - Animal Diversity 220-5 Animal Diversity. (Advanced University Core Curriculum course) Diversity and taxonomy of animals, emphasizing structure, function, life cycles, behavior, and phylogeny. Three lectures and two two-hour laboratories per week. Prerequisite: BIOL 200A and BIOL 200B, or BIOL 212 and BIOL 213 with grades of C or better. Laboratory/field trip fee: \$40.

ZOOL312I - Conservation Natural Resources 312I-3 Conservation of Natural Resources. (University Core Curriculum) [IAI Course: L1 905] This course adopts an interdisciplinary approach to the study of conservation of natural resources. It integrates environmental science and environmental economics. By examining the costs and benefits of resource consumption, we will attempt to determine the socially optimal level of resource utilization. We will look at ways in which governments attempt to achieve socially optimal resource use, and the effects of these government policies on the environment. Topics considered in the course include: solid waste, energy consumption, air pollution, agriculture and global environment change.

ZOOL320 - Vertebrate Zoology 320-3 Vertebrate Zoology. Evolution and diversity of fishes, amphibians, nonavian reptiles, birds, and mammals, including consideration of fossils, taxonomy, anatomy, physiology, ecology, behavior, and conservation. Prerequisite: ZOOL 220 with a grade of C or better.

ZOOL351 - Ecological Methods 351-3 Ecological Methods. (Same as PLB 351) Basic ecological field techniques for analysis of community structure and functional relationships. Two 3-hour laboratories per week. Prerequisite: BIOL 307. Laboratory/field trip fee: \$25.

ZOOL360 - Introductory Biostatistics 360-3 Introductory Biostatistics. (Same as PLB 360) Introduction to basic statistical concepts and methods as applied to biological data. Includes descriptive techniques such as measures of central tendency, variability, hypothesis testing, analysis of variance and simple linear regression and correlation. Analysis of computer generated output and report writing will be required. Prerequisite: MATH 108.

ZOOL385 - Intro Marine Biology 385-3 Introduction to Marine Biology. Principles of marine biology including physical and chemical characteristics of marine ecosystems, biology of important marine organisms, and descriptions of specific marine habitats ranging from coastal to pelagic and surface to

deep benthic. The course will include a mandatory 5-day field trip to a coastal marine station over spring break, which will incur a cost to students of approximately \$500. Two 1-hour lectures and one 2-hour lab per week. Prerequisite: ZOOL 220 with a grade of C or better.

ZOOL405 - Systematic Zoology 405-3 Systematic Zoology. Estimation, analysis, and interpretation of phylogenetic trees; concepts, delimitation, and description of species; biological taxonomy and systems of classification; application of phylogenetics to the study of evolution. Prerequisites: BIOL 304 and MATH 108 with grades of C or better.

ZOOL407 - Parasitology 407-4 Parasitology. Principles, collection, identification, morphology, life histories, and control measures. Two lectures and two 2-hour laboratories per week. Prerequisite: ZOOL 220 with a grade of C or better. Laboratory/Field Trip Fee: \$15.

ZOOL408 - Herpetology 408-3 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. Two lectures and one 2-hour laboratory per week. Prerequisite: ZOOL 220 with a grade of C or better. Laboratory/Field Trip Fee: \$15.

ZOOL409 - Vertebrate Histology 409-4 Vertebrate Histology. Microscopic structure of organs and tissues with emphasis on mammalian material. Two lectures and two 2-hour labs per week. Prerequisite: ZOOL 220A,B or ZOOL 220. Laboratory/Field Trip Fee: \$15.

ZOOL410 - Conservation Biology 410-3 Conservation Biology. An introduction to patterns of global biodiversity and threats to that diversity. Course emphasizes how principles from numerous biological disciplines are involved in conserving and managing biodiversity, and how social, economic, and political factors affect conservation strategies. Prerequisites: BIOL 307 and MATH 108 with grades of C or better.

ZOOL411 - Environmental Risk Assessment 411-3 Environmental Risk Assessment. Risk assessment can be defined as the process of assigning magnitudes and probabilities to the adverse effects of human activities or natural catastrophes. Prerequisites: BIOL 307 and CHEM 340 with grades of C or better.

ZOOL413 - The Invertebrates 413-4 The Invertebrates. Structure, phylogeny, distinguishing features and habitats of the invertebrates. Two lectures and two 2-hour laboratories per week. Prerequisite: ZOOL 220A or ZOOL 220. Laboratory/Field Trip Fee: \$15.

ZOOL414 - Freshwater Invertebrates 414-4 Freshwater Invertebrates. Taxonomic groups, identification, distribution, and habitats of the North American freshwater invertebrate fauna. Two lectures, two 2-hour laboratories per week. Prerequisite: ZOOL 220A or ZOOL 220. Laboratory/Field Trip Fee: \$15.

ZOOL415 - Limnology 415-3 Limnology. (Same as PLB 416) Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures and one 4-hour laboratory alternate weeks. Prerequisite: BIOL 307 with a grade of C or better. Laboratory/Field Trip Fee: \$15.

ZOOL418 - Vertebrate Anatomy Lab 418-3 Vertebrate Anatomy Laboratory. Comparative anatomy and dissection of representative vertebrate specimens. Three 2-hour laboratories per week. Prerequisite: ZOOL 220 with a grade of C or better. Prior or concurrent registration in ZOOL 320 recommended. Laboratory fee: \$50.

ZOOL425 - Invertebrate Paleo & Paleoecol 425-3 Invertebrate Paleontology and Paleoecology. (Same as GEOL 425) Concepts of paleontology and paleoecology. Emphasis on functional morphology, lifestyles and habitats of fossil invertebrates and algae. The nature and evolution of marine and coastal paleocommunities. The effects of extinction events on paleocommunities and biodiversity. Laboratory. Field trips required. Prerequisite: GEOL 325 or ZOOL 220 with grade of C or better. Expense will vary in proportion to distance traveled and locations visited and will be determined before each semester. Field trip fee not to exceed \$199.

ZOOL426 - Comparative Endocrinology 426-3 Comparative Endocrinology. (Same as ANS 426, PHSL 426) Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues, including mechanisms of transport, receptor kinetics, and signal transduction. Prerequisites: ANS 331 or ZOOL 220 or PHSL 310 with a grade of C. Laboratory/Field Trip Fee: \$15.

ZOOL432 - Principles of Toxicology 432-3 Principles of Toxicology. This course will introduce students to the main topics in the field of toxicology. The emphasis will be on understanding physiological,

biochemical, and molecular mechanisms of toxicity. Prerequisites: BIOL 200A and BIOL 200B; or BIOL 211, BIOL 212, and BIOL 213; with grades of C or better.

ZOOL433 - Comparative Animal Physiology 433-3 Comparative Animal Physiology. (Same as PHSL 433) Variations of physiological processes in animal phyla, comparison with human physiology, and physiological adaptation to environmental variation. Review of basic physiological principles and comparative aspects of mechanism and function. Prerequisites: BIOL 200A or BIOL 211; BIOL 200B or BIOL 213, or PHSL 310; with grades of C or better.

ZOOL434 - Environmental Physiology 434-3 Environmental Physiology. Physiological adaptations to environmental conditions in animals and humans. Lab/lecture course explores molecular, hormonal, immunological, developmental, and phenotypic processes mediating responses to factors such as stress, disease, contaminants, nutrition, and life history trade-offs. Prerequisite: BIOL 307 or PHSL 310 or ZOOL 433 with a grade of C or better. Laboratory/field trip fee: \$20.

ZOOL435 - Plant-Insect Interactions 435-3 Plant-Insect Interactions. (Same as PLB 435) Plants and insects have played major roles in influencing each other's evolutionary diversification. This course will be an evolutionary and ecological examination of the interactions between plants and insects. Topics will include herbivory, pollination relationships, ant-plant mutualisms, host plant choice, specialized vs. generalized relationships, seed and fruit dispersal, coevolution/cospeciation, and chemical ecology. Prerequisite: BIOL 307 with grade of C or better, or equivalent.

ZOOL438 - Molecular Genetics Lab 438-3 Plant and Animal Molecular Genetics Laboratory. (Same as PLB 438, PSAS 438, AGSE 438, CSEM 438) Arabidopsis and Drosophila model organisms, training in laboratory safety, reagent preparation, phenotype analysis, genetics, DNA and RNA analysis, PCR, cDNA construction, cloning and sequencing. Includes plant and bacterial transformation, and population level analysis of genetic variation using RAPD markers in grasses and Alu insertion in humans. Two 2-hr labs and one 1-hr lecture per week. Prerequisite: BIOL 305 or equivalent or consent of instructor. Lab fee: \$30.

ZOOL440 - Wildlife Nutritional Ecology 440-3 Wildlife Nutritional Ecology. This course will provide an understanding of basic nutritional principles (including foraging, digestion, absorption, metabolism, and requirements), demonstrate their application to ecological relationships of wild terrestrial vertebrates with their environment, and stimulate students to critically evaluate published literature in this field of study. Prerequisite: BIOL 307.

ZOOL443 - Restoration Ecology 443-3 Restoration Ecology. (Same as PLB 443) Ecological restoration tests current understanding of ecosystem assembly and function. This course applies ecological theory to restoration, with an emphasis on factors influencing plant community assembly and evaluating restoration success. Two lectures a week and one four-hour lab alternate weeks. Prerequisite: BIOL 307 or equivalent.

ZOOL444 - Ecological Analysis Communities 444-4 Ecological Analysis of Communities. (Same as PLB 444) Includes concepts and methods pertaining to the analysis of ecological data. Approaches will include a variety of methods for analyzing multivariate ecology, diversity, pattern, and spatial data. Laboratory will include the computer application of these concepts and methods to field situations. Two lectures and one 4 hour lab per week. Prerequisite: PLB/ZOOL 360, BIOL 307. Lab fee: \$15.

ZOOL445 - Wetland Ecology & Mgmt 445-3 Wetland Ecology and Management. (Same as PLB 445) This course provides students with experience in wetland ecology and management with an emphasis on wetland functioning, field sampling, and identification of common wetland plants. Prerequisite: either BIOL 200B or BIOL 213 or PLB 200; and BIOL 307; or consent of instructor. Two lectures and one 4-hour lab per week. Lab fee: \$25.

ZOOL450 - Genome Evolution 450-3 Genome Evolution. (Same as PLB 455) This course introduces the diversity of genomes and the evolutionary forces shaping them. Molecular evolution from the level of single nucleotides to whole genomes will be covered. Prerequisites: BIOL 304 and BIOL 305.

ZOOL458 - Multiple Stressors in Ecology 458-3 Multiple Stressors in Ecology. In this class, students will use a step-by-step approach to evaluate an environmental issue or human concern compounded by climate change. The evaluation will begin with a conceptual model of the problem, followed by

planned management strategies based on collaborative decision making. The class is designed to foster quantitative reasoning, include that reasoning in research, and articulate findings in terms that foster collaborative management and outreach. Examples of potential projects include climate change impacts in concert with disease propagation, habitat quality and quantity, pollutant uptake in ectotherms, coral bleaching, changing human coastal communities, or fire incidence.

ZOOL461 - Mammalogy 461-3 Mammalogy. Taxonomic characteristics, identification, and natural history of mammals. Two 1-hour lectures and one 2-hour laboratory per week. Prerequisite: ZOOL 220B or ZOOL 220. Laboratory/Field Trip Fee: \$10.

ZOOL462A - Waterfowl Ecology 462A-2 Waterfowl Ecology and Management (Lecture). This class will explore the pertinence of basic life history theory and ecological principles to waterfowl management. Lecture topics include but are not limited to waterfowl life histories (i.e., productivity and mortality), foraging ecology, nutrition, habitat use, habitat management, migration, and the influence of harvest. Prerequisites: ZOOL 220, BIOL 307 with minimum grades of C. Co-requisite: ZOOL 462B.

ZOOL462B - Waterfowl Laboratory 462B-1 Waterfowl Ecology and Management (Laboratory). This laboratory will meet 1 day/week for 2 hours. The primary objective will be waterfowl identification with a secondary emphasis on wetland plant identification and field techniques in waterfowl research and management. There will be 2-3 Saturday field trips. Prerequisites: none. Laboratory/field trip fee: \$20.

ZOOL464 - Wildlife Admin & Policy 464-3 Wildlife Administration and Policy. Responsibilities of private, state, and federal natural resources management agencies. Legal and political processes in areas of wildlife and natural resources. Three lectures per week. Special approval needed from the instructor.

ZOOL465 - Ichthyology 465-3 Ichthyology. Anatomy, physiology, sensory biology, behavior, taxonomy, evolution, zoogeography, and ecology of fishes. Two lectures and one 2-hour laboratory per week. Prerequisite: ZOOL 220 with a grade of C or better. Laboratory/Field Trip Fee: \$10.

ZOOL466 - Fish Management 466-3 Fish Management. Sampling, age and growth, dynamics, habitat improvement, manipulation of fish populations, and management of freshwater and marine fish stocks. Two lectures per week and one 4-hour laboratory alternate weeks. Offered Fall term. Prerequisite: 10 hours of biological science or consent of instructor.

ZOOL467 - Ornithology 467-3 Ornithology. Classification and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. One lecture and one four-hour laboratory per week. Prerequisite: ZOOL 220B or ZOOL 220. Laboratory/Field Trip Fee: \$10.

ZOOL468 - Wildlife Biology Principles 468-3 Wildlife Biology Principles. Basic concepts of wildlife ecology and management. Includes lectures on ecological physiology, population dynamics, and wildlife management strategies. Prerequisite: ZOOL 220, BIOL 307.

ZOOL469 - Wildlife Techniques 469-3 Wildlife Techniques. Field-oriented course with instruction in techniques for management of wild species and their habitat. One 1 1/2-hour lecture and one 3-hour laboratory per week, two of which may be field trips on Saturdays. Prerequisite: ZOOL 220A,B or ZOOL 220. Laboratory/Field Trip Fee: \$30.

ZOOL471 - Entomology 471-4 Entomology. Structure, classification, and life histories of insects. Two lectures and two 2-hour laboratories per week. Prerequisite: ZOOL 220A or ZOOL 220. Laboratory/Field Trip Fee: \$10.

ZOOL472 - Intro Systems Biology 472-3 Introduction to Systems Biology. (Same as PLB 471) The experimental and bioinformatics analysis of large genomic and post-genomic data sets. The goal is integration of gene regulation, protein interaction, metabolite and hormonal signaling molecules into an understanding of basic cellular circuitry networks. Examine redundancy, robustness and decision making in biological systems. Prerequisite: BIOL 305 or CS 330. Lab fee: \$15.

ZOOL477 - Aquaculture 477-3 Aquaculture. (Same as ANS 477) Production of food, game, and bait fishes. Design of facilities, chemical and biological variables, spawning techniques, diseases and nutrition. Two lectures per week and one four-hour laboratory on alternate weeks. Prerequisites: BIOL 200A or BIOL 211 or ZOOL 118 or ANS 121 with grade of C or better.

ZOOL478 - Animal Behavior 478-3 Animal Behavior. Biological basis of the behavior of animals. Two lectures and one 2-hour laboratory per week. Prerequisite: One year of biological science or permission of instructor.

ZOOL482 - Zoology Senior Seminar 482-1 Zoology Seminar for Seniors. Each student reports on a selected topic, the class discusses using original scientific literature, and the report. The course emphasizes development of Oral and Written communication skills. One meeting per week. Not for graduate credit. Restricted to senior standing or 24 hours of life science completed.

ZOOL485 - Special Topics in Zoology 485-2 to 4 Special Topics in Zoology. Examination of topics of special interest not available in other departmental courses. Offered in response to student need and faculty availability. Special approval needed.

ZOOL490 - Food Webs and Ecosystems 490-3 Energetics, Food Webs, and Ecosystems. (Same as PLB 490) This course places conservation of particular species into the context of community and ecosystem management. Approaches to quantifying energy needs of individual species will be extended to models of trophic networks among multiple species. Food web structure and function, species interactions, and resilience to species loss species invasions, and environmental changes will be examined in light of landscape processes. Prerequisite: BIOL 307 or consent of instructor.

ZOOL491 - Internship in Zoology 491-1 to 6 Internship in Zoology. Supervised training in a formalized program with a zoological institution or agency. May not be used for minor in Zoology. For internships outside the department, a prospectus from the sponsoring agency with duties and duration of internship must be approved by a Zoology faculty supervisor and the Director of Undergraduate Studies before registration. No more than three hours per semester may be taken if student is on-campus. Mandatory Pass/Fail. Not for graduate credit. Prerequisite: ZOOL 220 with a grade of C or better and departmental approval. Specific internships have specific selection criteria. Of all credits that a student completes for ZOOL 491, 492, and 493, a maximum of three hours may count toward the major.

ZOOL492 - Individual Research Zoology 492-1 to 3 Individual Research in Zoology. Research on zoological problems. May not be used for minor in zoology. Some cost may be borne by student. A proposal describing the research project must be approved by a Zoology faculty supervisor and the Director of Undergraduate Studies before registration. Not for graduate credit. Of all credits that a student completes for ZOOL 491, 492, and 493, a maximum of three hours may count toward the major. Prerequisites: ZOOL 220 with grade of C or better, minimum of 2.75 GPA (A=4.00). Restricted to junior or senior standing. Special approval needed from the department.

ZOOL493 - Honors Research Zoology 493-1 to 6 Honors Research in Zoology. Individual research for honors students in zoology. May not be used for minor in Zoology. A research proposal must be approved by a Zoology faculty supervisor before registration and the Director of Undergraduate Studies. Not for graduate credit. Prerequisite: ZOOL 220 with a grade of C or better, minimum 3.0 cumulative GPA (A=4.00), participation in the University Honors Program, and departmental approval. Of all credits that a student completes for ZOOL 491, 492, and 493, a maximum of three hours may count toward the major.

ZOOL496 - Zoology Field Studies 496-1 to 3 Zoology Field Studies. Formal, individualized training in field zoology, including experiences that acquaint students with animals in various environments, methods of field study, specimen collection and preservation, management and conservation, or other relevant skills. A prospectus of the training experience must be approved by a Zoology faculty supervisor before registration. Credit hours may not be counted toward a minor or major in Zoology. Not for graduate credit. Mandatory Pass/Fail. Prerequisite: ZOOL 220 with a grade of C or better.

ZOOL497 - Zoology Lab Studies 497-1 to 3 Zoology Laboratory Studies. Formal, individualized training in laboratory zoology, including experiences that acquaint students with dissection, microscopy, museum preparatory and curatorial techniques, biotechnology, environmental chemistry assays, or other relevant skills. A prospectus of the training experience must be approved by a Zoology faculty supervisor before registration. Credit hours may not be counted toward a minor or major in Zoology. Not for graduate credit. Mandatory Pass/Fail. Prerequisite: ZOOL 220 with a grade of C or better.

ZOOL505 - Wildlife Admin & Mgmt 505-2 Wildlife Administration and Management Constituencies. This class will explore what motivates individuals to pursue outdoor activities, why individual user groups are often extremely passionate about their individual outdoor activity, how outdoor activities impact

wildlife populations and habitat, outdoor ethics, how to safely interact with individuals who are often in possession of firearms or other potentially dangerous tools that are used for hunting, and how to resolve conflicts between user groups.

ZOOL510 - Evolutionary Biology 510-3 Evolutionary Biology. An introductory survey of evolutionary biology at the graduate level, emphasizing conceptual issues in evolutionary genetics, adaptation, systematics, and macroevolution. Prerequisite: BIOL 305 or equivalent.

ZOOL521 - Stream Ecology 521-3 Stream Ecology. The physical, chemical, and biological factors affecting organisms in streams. Two lectures per week and one four-hour laboratory alternate weeks. Prerequisite: ZOOL 415. Special approval needed from the instructor.

ZOOL530 - Wildlife Diseases 530-3 Wildlife Diseases. Introduction to the causes and nature of diseases of wildlife with emphasis on wild mammals and birds. The relationship of disease to the population ecology of species will be emphasized further. Two lectures and one two-hour laboratory per week. Offered Spring term. Special approval needed from the instructor.

ZOOL532 - Wildlife Toxicology 532-3 Wildlife Toxicology. Fate and effects of environmental toxicants in wildlife. Review of descriptive and mechanistic toxicology for environmental contaminants. Investigation of the relationship between individual and community responses to toxicant exposure. Examination of current hazard assessment protocols and associated regulatory agencies. Prerequisite: ZOOL 468 or consent of instructor.

ZOOL533 - Aquatic Toxicology 533-4 Aquatic Toxicology. This course will provide an overview of concepts and methodology for conducting tests in the field of aquatic toxicology. Specific topics to be covered include: acute and chronic bioassays, bioaccumulation tests including biotransformation processes and toxicokinetics, and modeling techniques using Quantitative Structure Activity Relationships and fugacity modeling. This class is recommended for students interested in learning about the applied methodology used in the rapidly evolving field of aquatic toxicology. Prerequisite: BIOL 307 and CHEM 340 or equivalent, or instructor's permission.

ZOOL534 - Wildlife Habitat Analysis 534-3 Wildlife Habitat Analysis. Physical, biological and behavioral factors that influence habitat use and selection by wild vertebrate populations. Landscape level analysis of wildlife habitats. Modeling habitat suitability, environmental impact and wildlife population dynamics with habitat data. Application and use of remote sensing and geographic information systems in natural resource management and habitat evaluation. One two-hour lecture and one two-hour laboratory per week. Special approval needed from the instructor.

ZOOL535 - Quantitative Zoogeography 535-3 Quantitative Zoogeography. This course focuses on spatial analyses from the perspective of the organism (or a group of organisms) and the role of the environment in shaping its distribution. The course will cover topics associated with species distribution modeling, biodiversity quantification, landscape genetics, animal movement analyses, home range quantification, and landscape conservation prioritization from the perspective of conserving a single species. Prerequisite: familiarity with GIS and consent of instructor.

ZOOL536 - Spatial Analysis in Ecology 536-3 Spatial Analysis in Ecology. This course provides the ecological, GIS and statistical foundations needed to perform spatial analyses of ecological data at the landscape level. The course will cover the conceptual basis and practical application of GIS-based techniques for accounting for spatial autocorrelation, data reduction, batch processing of analyses (in Python, ArcGIS and R), spatial interpolation of spatial data, and building mixed predictive models aimed at assessing landscape level processes. Prerequisite: familiarity with GIS and consent of instructor.

ZOOL540 - Stable Isotope Ecology 540-3 Stable Isotopes in Ecology. This course will introduce students to fundamentals of stable isotope biogeochemistry, analytical techniques, and interpretation and analysis of stable isotope data. Students will become acquainted with a diverse array of applications of stable isotopes in ecological research in terrestrial and aquatic systems. Two lectures or discussions per week. Prerequisite: 6 hours of chemistry, 10 hours of biological science. Special approval needed from the instructor.

ZOOL545 - Ecosystem Ecology 545-3 Ecosystem Ecology. (Same as PLB 545) Fundamentals of and human modification to atmospheric chemistry and cycling of major nutrients in terrestrial ecosystems

are covered in the context of global change. Laboratory exercises provide methodology and analytical approaches to studying ecosystem structure and function. Two lectures a week and one four-hour lab alternate weeks.

ZOOL550 - Vertebrate Populations 550-3 Analysis of Vertebrate Populations. This course provides instruction in the estimation of demographic parameters including but not limited to occurrence, abundance, mortality, birth, growth, philopatry, emigration, and immigration. Students will be introduced to and provided detailed instruction in the use of Program MARK to analyze data from individually marked organisms. Prerequisite: a course in statistics.

ZOOL556 - Phylogenetics 556-3 Phylogenetics. (Same as ANTH 556, MBMB 556, and PLB 556) An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypotheses. Special approval needed from the instructor.

ZOOL557 - Biostatistics 557-4 Biostatistics. (Same as PLB 557) Basic biostatistics procedures used by researchers in life sciences and related fields. Topics include descriptive statistics, probability and distributions, statistical models, likelihood methods, experimental design, analysis of variance, regression, correlation, and the use of statistical software.

ZOOL558 - Advanced Biostatistics 558-4 Advanced Biostatistics. (Same as PLB 558) Advanced biostatistical procedures used by researchers in life sciences and related fields. Topics include multiple and logistic regression, randomization tests, jackknife and bootstrap, Mantel tests, BACI designs, MANOVA, repeated measures analysis and the use of statistical software. Prerequisite: ZOOL 557, PLB 557 or equivalent.

ZOOL559 - Analytical Toxicology 559-4 Analytical Techniques in Toxicology. This is an advanced class for graduate students interested in the analytical tools used in the field of Environmental Toxicology. Prerequisite: CHEM 340 with C or better.

ZOOL564 - Aquaculture Techniques 564-1 to 2 Aquaculture Techniques. (Same as ANS 564) Practical experience in aquaculture techniques. Course consists of modules which require student participation in hands-on experience, (e.g., spawning, induction of spawning, production of fry, operation and grading, diagnosis and treatment of parasites and diseases, and transporting of fish). One credit for completion of two modules. Register any semester, one year to complete elected number of modules. Written report and examination required for each module. Cost incurred by student varies with modules selected. Prerequisite: ZOOL 477 or ANS 477 or consent of instructor.

ZOOL565 - Environment Physiology of Fish 565-3 Environmental Physiology of Fish. Synthesis of effects of pollutants on physiological processes of fish. Course begins with an overview of fish physiology. Topics include: concepts, methods, and measurements in aquatic toxicology; histopathological, physiological, and behavioral responses to pollutants; and toxicity of heavy metals, organics, particulates and other pollutants. Three lectures per week. Prerequisite: ZOOL 465 or consent of instructor.

ZOOL568 - Fish Stock Assessment 568-2 Fish Stock Assessment. Methods of characterizing fish populations including mortality rates, age growth analysis, population sampling, yield models, habitat evaluation procedures and creel survey techniques. Two one-hour meetings per week. Prerequisite: ZOOL 466 or consent of instructor.

ZOOL569 - Advanced Fisheries Mgmt 569-3 Advanced Fisheries Management. Advanced topics related to the management of fisheries including urban fisheries, native American fisheries, freshwater commercial fisheries, Great Lakes fisheries, impact of power generating plants on fishes, and in-depth consideration of indices of community structure and current topics in fish management. Three lectures per week. Prerequisite: ZOOL 466 or consent of instructor.

ZOOL570 - Advanced Aquaculture 570-3 Advanced Aquaculture. (Same as ANS 570) Special topics in aquaculture and practical methods for the production of coldwater, coolwater, warmwater, and tropical aquatic species. Prerequisite: ZOOL 477 or ANS 477 or equivalent with a grade of C or better.

ZOOL571 - Fish Reproduction & Breeding 571-3 Fish Reproduction and Breeding. (Same as ANS 571) Principles of finfish reproductive strategies, reproductive physiology and captive breeding. The role of genetics and the use of biotechnology and various breeding techniques in breeding programs will also be emphasized. The purpose of this course is to develop an understanding of fish reproduction and breeding techniques and to gain an appreciation of the complexity involved in managing a hatchery breeding program. Two lectures a week and one four-hour lab alternate weeks. Prerequisite: ZOOL 477 or ANS 477 or equivalent with a grade of C or better.

ZOOL573 - Physiological Ecology 573-3 Physiological Ecology. The role of physiological, morphological, and behavioral adaptations and adjustments in the ecology of vertebrate organisms with special emphasis on examining the energy balance and environment as it influences vertebrate ecology. Two hours of lecture and one two-hour laboratory. Prerequisite: BIOL 307 or equivalent. Special approval needed from the instructor.

ZOOL574 - Internship in Wildlife 574-1 to 6 Internship in Wildlife Administration and Management. A minimum 2-month full-time internship will be conducted at a Fish and Wildlife Refuge, National Forest, State Wildlife Area, or other private or publicly held land trust. During the time of the internship, daily activities of the students will be supervised by agency personnel. In collaboration with agency personnel, students will be required to write and submit a land improvement proposal to an appropriate funding agency. Internships must be approved by the Director of the Professional Science Master's program in Zoology. Grading will be based on a rubric outlining student performance during the day to day activities internship and the final land improvement proposal.

ZOOL575 - Topics Amphibian Biology 575-3 Topics in Amphibian Biology. Readings, discussions, and student presentations on current research in the biology of amphibians.

ZOOL576 - Seminar in Ecology 576-1-12 hours; 1 per semester Seminar in Ecology. (Same as PLB 589A) Discussions of current and historical research and literature in various subject areas of ecology.

ZOOL577 - Population Ecology 577-3 Population Ecology. Principles of population dynamics as related to animals, with application to management and conservation of animal populations. Areas of emphasis include (A) an introduction to mathematical models and graphical theory of population dynamics, (B) application of theory to population management & conservation, and (C) empirical approaches to studying population persistence and regulation. Prerequisite: BIOL 307 or consent of instructor.

ZOOL578 - Population Genetics 578-3 Population Genetics. (Same as PLB 578) Genetic structure of populations, factors causing changes and principles governing rate and direction of change. Three lectures per week. Prerequisite: BIOL 304 or equivalent, and BIOL 305 or equivalent.

ZOOL579 - Molecular Genetics Techniques 579-3 Molecular Genetics Techniques. Practical experience in molecular genetics techniques currently used in zoology for population genetic analysis and for molecular systematics. Emphasis will be on methods for allozyme, mtDNA and nuclear DNA analysis. Class projects will focus on experimental design, data collection and analysis. Special approval needed from the instructor.

ZOOL580 - Topics in Evolution 580-1 Current Topics in Evolution. (Same as ANTH 580, MBMB 580) The Evolution Discussion Group meets weekly throughout the year to discuss current evolutionary literature and the research of participants. All students and faculty with an interest in evolutionary biology are welcomed to participate.

ZOOL581 - Zoological Literature 581-2 Zoological Literature. Diversity and functions of zoological literatures, scientific writing and the publication process. Two lectures per week. Restricted to graduate status in a biological science.

ZOOL582 - Graduate Zoology Seminar 582-1 to 4 (1,1,1,1) Graduate Zoology Seminar. Special topics in zoology. Consult department for each semester's topic. One meeting per week. Special approval needed from the instructor and department.

ZOOL584 - Conservation Genetics 584-3 Conservation Genetics. Application of principles from evolutionary and ecological genetics to conservation biology, fishery management, wildlife management, and aquaculture. Includes an overview of classical, molecular, population and quantitative genetics

leading to an understanding of how managers can conserve genetic diversity and evolutionary potential of natural and captive populations. Prerequisite: BIOL 305 or consent of instructor.

ZOOL585E - Seminar: Reasoning in Ecology 585E-3 per topic Seminar: Reasoning in Ecology. Conceptual issues in ecology and ecological research.

ZOOL585G - Seminar in Parasitology 585G-3 per topic Seminar in Parasitology. Advanced study of special topics in zoology.

ZOOL585Z - Seminar in Selected Topics 585Z-3 per topic Seminar in Selected Topics. Advanced study of special topics in zoology. Special approval needed from the instructor or department.

ZOOL586 - Fisheries Seminar 586-1 Fisheries Seminar. Contemporary topics, literature, and oral and written communication in fisheries science. Enrollment required for zoology graduate students specializing in fisheries science for all fall and spring semesters until degree requirements are completed, unless exempted by the student's academic advisor. Only one 586 credit hour, however, may be used to satisfy degree requirements. One meeting per week.

ZOOL588 - Wildlife Seminar 588-1 to 4 (1, 1, 1, 1) Wildlife Seminar. Contemporary topics, literature, and oral and written communication in wildlife ecology. Enrollment required for zoology graduate students specializing in wildlife ecology for all Fall and Spring semesters until degree requirements are completed. Only four 588 credit hours, however, may be used to satisfy degree requirements. One meeting per week.

ZOOL589 - Zoology Colloquium 589-1 to 2 (1,1) Zoology Colloquium. Regularly scheduled presentations by invited seminar speakers on topics of current research interest in Zoology. Graded S/U. Only two credits of 589 may be used to satisfy degree requirements. Restricted to graduate status in Zoology.

ZOOL593 - Individual Research 593-1 to 12 Individual Research. Investigation in zoology other than those for theses. Only three hours may be credited toward a degree. Some costs may be borne by the student.

ZOOL596 - Research 596-1 to 66 (1 to 12 per semester) Research. Graded S/U only. Credit may not be used toward a degree in Zoology. Special approval needed from the instructor.

ZOOL597 - Advanced Zoological Techniques 597-1 to 12 Advanced Zoological Techniques. Individualized techniques or experimental procedures to prepare for dissertation research. May be taken at another university. Number of credits determined by committee. Graded on S/U basis following final report submitted to major adviser. Restricted to admission to Ph.D. degree program in Zoology. Special approval needed from the major adviser.

ZOOL598 - Research Paper 598-1 to 6 Research Paper. Research paper for Master of Science degree for Biological Sciences major. Some cost may be borne by the student. Graded S/U only. Special approval needed from the instructor.

ZOOL599 - Research & Thesis 599-1 to 36 (1 to 12 per semester) Research and Thesis. Thesis for Master of Science degree. Only six hours may count toward the degree. Some cost may be borne by student. Graded S/U only. Special approval needed from the instructor.

ZOOL600 - Research & Dissertation 600-1 to 32 (1 to 16 per semester) Research and Dissertation. Research and dissertation for Doctor of Philosophy degree. Some cost may be borne by student. Graded S/U only. Special approval needed from the instructor.

ZOOL601 - Continuing Enrollment 601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

ZOOL699 - Postdoctoral Research 699-1 Postdoctoral Research. Must be a Postdoctoral Fellow. Concurrent enrollment in any other course is not permitted.

Zoology Faculty

Anderson, Frank E., Associate Professor, Ph.D., University of California, Santa Cruz, 1998.
Anthoney, Terence R., Associate Professor, Emeritus, M.D., Ph.D., University of Chicago, 1968, 1975.
Boyles, Justin G., Assistant Professor, Ph.D., Indiana State University, 2009.
Brandon, Ronald A., Professor, Emeritus, Ph.D., University of Illinois, 1962.
Brooks, Marjorie L., Associate Professor, Ph.D., University of Wyoming, 2003.
Brown, Jason L., Assistant Professor, Ph.D., East Carolina University, 2006.
Burr, Brooks M., Professor, Emeritus, Ph.D., University of Illinois, 1977.
Eichholz, Michael W., Associate Professor, Ph.D., University of Alaska, 2000. Englert, DuWayne C., Professor, Emeritus, Ph.D., Purdue University, 1964.
Feldhamer, George A., Professor, Emeritus, Oregon State University, 1977.
Garvey, James E., Professor, Ph.D., Ohio State University, 1997.
Halbrook, Richard S., Associate Professor, Emeritus, Ph.D., Virginia Polytechnic Institute and State University, 1990.
Heidinger, Roy C., Professor, Emeritus, Ph.D., Southern Illinois University, 1970.
Heist, Edward J., Professor, Ph.D., College of William and Mary, 1994.
Ibrahim, Kamal M., Associate Professor, Ph.D., University of Cambridge, 1989.
Jiminez-Ruiz, Francisco Agustin, Associate Professor, Ph.D., University of Nebraska-Lincoln, 2004.
King, David, Associate Professor, Emeritus, Ph.D., University of California at San Diego, 1975.
Kohler, Christopher C., Professor, Emeritus, Ph.D., Virginia Polytechnic Institute and State University, 1980.
Krajewski, Carey, Professor and Chair, Ph.D., University of Wisconsin, 1988.
Lovvorn, James R., Professor, Ph.D., University of Wisconsin, 1987.
Lydy, Michael J., Professor, Ph.D., Ohio State University, 1990.
McPherson, John E., Jr., Professor, Emeritus, Ph.D., Michigan State University, 1968.
Muhlach, William L., Associate Professor, Emeritus, Ph.D., University of Illinois at Chicago, 1986.
Nsofor, Margaret N., Senior Lecturer, Ph.D., Mississippi State University, 1998.
Reeve, John D., Associate Professor, Ph.D., University of California Santa Barbara, 1985.
Schauber, Eric M., Professor, Ph.D., University of Connecticut, 2000.
Shepherd, Benjamin A., Professor, Emeritus, Ph.D., Kansas State University, 1970.
Sparling, Donald W., Associate Professor, Emeritus, Ph.D., University of North Dakota, 1979.
Stahl, John B., Associate Professor, Emeritus, Ph.D., Indiana University, 1958.
Thomas, Richard, H., Associate Professor, Emeritus, Ph.D., University of Arizona Tucson, 1985.
Waring, George H., Professor, Emeritus, Ph.D., Colorado State University, 1966.
Warne, Robin W., Associate Professor, Ph.D., University of New Mexico, 2008.
Whiles, Matt R., Professor, Ph.D., University of Georgia, 1995.
Whitledge, Gregory W., Associate Professor, Ph.D., University of Missouri, 2001.

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Catalog Year Statement:

Students starting their collegiate training during the period of time covered by this catalog (see bottom of this page) are subject to the curricular requirements as specified herein. The requirements herein will extend for a seven calendar-year period from the date of entry for baccalaureate programs and three years for associate programs. Should the University change the course requirements contained herein subsequently, students are assured that necessary adjustments will be made so that no additional time is required of them.