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

<table>
<thead>
<tr>
<th>Degree Requirements</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>University Core Curriculum Requirements ¹</td>
<td>41</td>
</tr>
<tr>
<td>College of Science Requirements</td>
<td>6</td>
</tr>
<tr>
<td>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</td>
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<tr>
<td>Requirements for Major in Physiology</td>
<td>(11)+58</td>
</tr>
<tr>
<td>PHSL 310</td>
<td>5</td>
</tr>
<tr>
<td>PHSL 410A, PHSL 410B</td>
<td>8</td>
</tr>
<tr>
<td>Physiology electives - (11 hours at the 300 or 400-level)</td>
<td>(2)+9</td>
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<tr>
<td>BIOL 211</td>
<td>(3)+1</td>
</tr>
<tr>
<td>BIOL 304, BIOL 305, BIOL 306, BIOL 409 (any two..)</td>
<td>6</td>
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# Degree Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CHEM 200, CHEM 201, CHEM 210, CHEM 211, CHEM 340, CHEM 341, CHEM 342, CHEM 343, CHEM 350, CHEM 351</td>
<td>(3)+20</td>
</tr>
<tr>
<td>PHYS 203A, PHYS 203B; PHYS 253A, PHYS 253B</td>
<td>8</td>
</tr>
<tr>
<td>MATH 150&lt;sup&gt;3&lt;/sup&gt;</td>
<td>(3)+1</td>
</tr>
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</table>

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.


**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 PHY 205B AND PHY 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 PHY 205B AND PHY 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 sectional 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 Physiology 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 of Physiological 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 - Advanced 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 - Advanced 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 - Reproductive Function/Sex Behavior 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 Phsl 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 Biology 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.


**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 L., 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.
Strader, April, Associate Professor Ph.D., University of Wisconsin, 2002.
Zheng, Zhenguai (Patrick), Assistant Professor, Ph.D., Shanghai University of Traditional Chinese Medicine, 1997.

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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.