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

Agricultural Systems Technology Management Specialization

<table>
<thead>
<tr>
<th>Degree Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Core Curriculum Requirements - To include MATH 108, CHEM 106, PLB 115, UNIV 101.</td>
<td>39</td>
</tr>
</tbody>
</table>

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 | 18 |
| Other required courses: ANS 121, ANS 122 or CSEM 200 | 3-4 |
| ABE 204 | 3 |
| Approved Management Electives | 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

<table>
<thead>
<tr>
<th>Degree Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
<td>39</td>
</tr>
<tr>
<td>Degree Requirements</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Agricultural Education Specialization Requirements</strong></td>
<td></td>
</tr>
<tr>
<td>Core Requirements: AGSE 110, AGSE 170, AGSE 311A, AGSE 311B, AGSE 314, AGSE 318</td>
<td>19</td>
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<tr>
<td>Other required courses:</td>
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</tr>
<tr>
<td>AGRI 323</td>
<td>3</td>
</tr>
<tr>
<td>ANS 121, ANS 122</td>
<td>4</td>
</tr>
<tr>
<td>CSEM 200 or HORT 200</td>
<td>3-4</td>
</tr>
<tr>
<td>PLB 200</td>
<td>4</td>
</tr>
<tr>
<td>ABE 204</td>
<td>3</td>
</tr>
<tr>
<td>Education EDUC 301, EDUC 302, EDUC 303, EDUC 308, EDUC 313, EDUC 319, EDUC 401, CI 360</td>
<td>27</td>
</tr>
<tr>
<td>Agriculture Electives</td>
<td>12-13</td>
</tr>
<tr>
<td>Electives</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Degree Requirements</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Core Curriculum Requirements - To include MATH 108, CHEM 140A, PLB 200, UNIV 101</td>
<td>39+2</td>
</tr>
<tr>
<td>Requirements for Agricultural Production Management Specialization</td>
<td></td>
</tr>
<tr>
<td>Core Requirements: AGSE 318, AGSE 371, AGSE 375</td>
<td>10</td>
</tr>
<tr>
<td>AGSE approved courses</td>
<td>18</td>
</tr>
<tr>
<td>Other required courses:</td>
<td></td>
</tr>
</tbody>
</table>
Degree Requirements | Credit Hours
--- | ---
ANS 121, ANS 122 | 4
CSEM 200 | 3
ABE 204 | 3
Emphasis area | 6
Agriculture Electives | 22
Electives | 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 101I. | 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 | 24
### Degree Requirements

<table>
<thead>
<tr>
<th>Communication Electives ³</th>
<th>25</th>
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</thead>
<tbody>
<tr>
<td>Electives ⁴</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
</tr>
</tbody>
</table>

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

| University Core Curriculum Requirements - To include MATH 108, CHEM 106, PLB 115 or ZOOL 115, UNIV 1011 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 | 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  
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 101. | 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 | (3)+5 |
CHEM 140A, CHEM 140B | (3)+5 |
MICR 201 | 4 |
PHSY 203A, PHSY 203B | 6 |
Other Required Courses | 20 |
AGSE 318 or CS 105 | 3 |
AGSE 431 | 3 |
### Degree Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABE 318</td>
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</tr>
<tr>
<td>ACCT 210</td>
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</tr>
<tr>
<td>IMAE 475</td>
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</tr>
<tr>
<td>MATH 109</td>
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</tr>
<tr>
<td>Approved Business/Agribusiness and Industrial Management Electives</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

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 Pckng 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.

Last updated: 07/11/2017

Southern Illinois University
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.