Agricultural and Extension Education

Degree Offered

- Bachelor of Science in Agriculture

Nature of the Program

The agricultural and extension education curriculum is designed to prepare students for entry into agricultural teaching, extension, or other professional employment in government, industry, or entrepreneurship where competence in communications and leadership are required. In order to prepare career-ready graduates, the curriculum provides flexibility to develop programs in options emphasizing teacher preparation, extension education, or production and technical agriculture. Courses are selected by the student in consultation with an advisor that will prepare the student to achieve his or her aspirations.

Admissions

All Agricultural and Extension Education students will enter the major in a basic program of study. Students will devote their freshman and sophomore years (first 59 hours) to the completion of GEF and basic agriculture curriculums.

To continue in the major beyond the sophomore year, a student must apply for and be accepted into one of three areas of emphasis: teacher education, extension education, or agricultural and environmental technology. The application process will occur during the semester a student has completed or will complete the requirements for “junior” status (59 hours or greater) at West Virginia University. Once a student enters an area of emphasis, he/she will proceed through key courses as a member of a cohort composed of students entering the area of emphasis during the same year.

To be admitted into one of three areas of emphasis, a students must complete the following courses: Eng 101, Eng 102, Math 121, Chem 111, Biol 101/103, and AGEE 103.

To enter the teacher education area of emphasis, students must meet the following:

- 2.50 or greater GPA
- Complete AGEE 202
- Successfully complete the PRAXIS CORE tests (Reading, Writing, and Math) (Students are exempt from this requirement if they meet West Virginia Department of Education exemption criteria (currently ACT of 26 or greater or a revised SAT score of 1170 or higher (combined Critical Reading and Math score)).)

To enter the extension education area of emphasis, students must meet the following:

- 2.00 or greater GPA

To enter the agricultural and environmental technology areas of emphasis, students must meet the following:

- 2.00 or greater GPA

Click the appropriate link below to view the corresponding Area of Emphasis (AOE) Requirements and Suggested Plans of Study.

- Agricultural & Environmental Technology (p. 5)
- Agricultural Teacher Education (p. 2)
- Extension Education (p. 4)

General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. (http://registrar.wvu.edu/gef)

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

General Education Foundations

<table>
<thead>
<tr>
<th>General Education Foundations</th>
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<tbody>
<tr>
<td>F1 - Composition &amp; Rhetoric</td>
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<tr>
<td>ENGL 101</td>
<td>Introduction to Composition and Rhetoric</td>
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<tr>
<td>&amp; ENGL 102</td>
<td>and Composition, Rhetoric, and Research</td>
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<td>or ENGL 103</td>
<td>Accelerated Academic Writing</td>
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<td>F2A/F2B - Science &amp; Technology</td>
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<tr>
<td>F3 - Math &amp; Quantitative Reasoning</td>
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AGRICULTURAL TEACHER EDUCATION AREA OF EMPHASIS

An effective agriculture teacher can assist in the economic and social development of a community. Middle school, high school, and adult classes strengthened by supervised agricultural experience programs are the methods whereby the agriculture teacher helps students become involved and established in production agriculture and off-farm occupations that require agricultural knowledge and skills.

Students completing this program will meet the requirements for certification by the West Virginia Department of Education. The program provides graduates with the opportunity to become qualified to teach in the broad field of agriculture as well as to become prepared to teach in such areas as production, agribusiness, conservation and forestry, agricultural mechanics, processing, horticulture, and natural resources. In addition to teaching, graduates have the opportunity for employment with governmental agencies and in private enterprise.

To be eligible for student teaching and subsequent certification to teach, the student must:

- AGRF 101 Global Food and Agricultural Industry (GEF 7)
- AGRF 102 Educational Colloquium in Agricultural and Extension Education
- AGRF 103 Basics of Agricultural Mechanization
- AGRF 110 Microcomputer Applications in Agricultural Education
- or CS 101 Intro to Computer Applications
- AGRF 203 Agriculture Mechanics Practica
- AGRF 220 Group Organization and Leadership (GEF 4)
- AGRF 421 Agricultural and Natural Resource Communications
- AGRF 431 Adult Education in Agriculture and Natural Resources
- AGRF 440 Principles of Cooperative Extension
- AGRF 202 Principles of Soil Science
- AGRF 203 Principles of Soil Science Laboratory
- ARE 204 Agribusiness Management
- A&VS 251 Principles of Animal Science
- PLSC 206 Principles of Plant Science (GEF 2)
- PSYC 101 Introduction to Psychology (GEF 8)
- PSYC 241 Introduction to Human Development (GEF 8)

Area of Emphasis (Select One)

- Courses from the following subjects: A&VS, AEM, AGBI, AGEE, AGRN, ANNU, ANPH, ANPR, ARE, CDFS, DSGN, ENTO, ENVM, ENVP, FDM, FDST, FMAN, FOR, GEN, HORT, ID, LARC, PLSC, PPTH, RESM, RPTR, WDSC, or WMAN

Additional electives to reach a minimum of 120 credits (number of credits needed may vary)

Total Hours

120
• possess a 2.5 grade point average on the total of all college credits, including hours earned in professional education and technical agriculture courses
• must pass competency tests in reading, writing, mathematics (Praxis Core Academic Skills for Educators) and agriculture content endorsement (Praxis II - Agriculture) prior to student teaching
• must pass the principles of teaching and learning test (Praxis Principles of Learning and Teaching Grades 7-12) for grades 7-12
• complete the required agriculture and professional education courses

REQUIREMENTS

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<td>AGEE 330</td>
<td>Shop Theory and Methods</td>
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<td>AGEE 426</td>
<td>Directing Future Farmers of America and Supervised Agricultural Experiences</td>
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<td>AGEE 430</td>
<td>Methods of Teaching Agriculture</td>
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<tr>
<td>AGEE 434</td>
<td>Managing Learning Environment</td>
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<td>Reading in the Content Areas</td>
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SUGGESTED PLAN OF STUDY FOR AGRICULTURAL TEACHER EDUCATION AREA OF EMPHASIS

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**Third Year**

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EXTENSION EDUCATION AREA OF EMPHASIS

This option prepares students with a foundation for extension education, agribusiness positions related to human resource management, international and corporate training and development, agricultural literacy and public relations, political interests, and commodity service organizations.

Coursework in this option will focus on a core of agricultural courses along with emphasis in non-formal education, designing educational/training programs and professional presentations, leadership development, teaching/training methods, and interpersonal communications. A twelve credit, twelve week internship related to the student’s career objective is required.

REQUIREMENTS

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<tr>
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<td>JRL 101</td>
<td>Media and Society</td>
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<td>POLS 102</td>
<td>Introduction to American Government</td>
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<td>POLS 220</td>
<td>State and Local Government</td>
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<td>POLS 240</td>
<td>Introduction to Public Administration</td>
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SUGGESTED PLAN OF STUDY FOR EXTENSION EDUCATION AREA OF EMPHASIS

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<td>POLS 102</td>
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<tbody>
<tr>
<td>POLS 220</td>
<td>3</td>
<td>AGEE 489</td>
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</table>
Agricultural and Extension Education

Agricultural and Environmental Technology Area of Emphasis

Today agriculture faces a tremendous challenge to provide food, fiber, and industrial raw supplies for billions of people at a time when resources are becoming more limited. Agriculture, meanwhile, has become more technical and complex, and qualified college graduates are needed to meet the future demands in this vital field.

This option is an undergraduate studies program that allows students some measure of flexibility in meeting their own educational objectives, particularly when those objectives may not be fulfilled entirely by any other single college major. This option prepares students to enter into the broad field of production and technical agriculture. The curriculum combines a broad range of technical courses in animal science, crop and soil science, horticulture, biological systems, agricultural mechanics, and agricultural economics. Additional courses in interpersonal and group leadership and communications training give students a competitive edge in the job market.

Students who desire to become owners, managers, or employees in production and or technical agriculture realize that they need a broad-based preparation. Agriculture presents opportunities in the farming and ranching business and industry, research and development, education, communications, governmental employment, and conservation and recreation.

The experiences gained through coursework and internships prove invaluable. General agriculture internships in production and technical agriculture, agribusiness, and commodity organizations enable students to enhance their communications, problem-solving and technical abilities, and management and decision making abilities. A twelve credit, twelve week internship related to the student’s career objective is required.

Requirements

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<tr>
<th>Course Code</th>
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Total credit hours: 120

Suggested Plan of Study for Agricultural & Environmental Technology Area of Emphasis

First Year

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### Major Learning Outcomes

**AGRICULTURE AND EXTENSION EDUCATION**

All students in the Agricultural and Extension Education undergraduate program will:

- Complete a core curriculum in general education foundations.
- Complete a core curriculum in basic agricultural knowledge.
- Complete a core curriculum in technology, leadership, and communication.
- Complete at least one area of emphasis (teacher education, extension education, or agricultural and environmental technology) in agricultural and extension education.

Students in the teacher education area of emphasis will:

- Develop the pedagogical skills necessary to enter and be successful in a high school teaching position.
- Complete all PRAXIS tests required for teacher certification in West Virginia.
- Complete a twelve week internship/student teaching placement in a middle/high school agricultural education program.

Students in the extension education area of emphasis will:

- Develop the academic knowledge and skills necessary to enter and succeed in a Master of Science program.
- Develop the educational and communication skills necessary to successfully enter and succeed in an Extension position.
- Complete a twelve week internship in an Extension related position.

Students in the agricultural and environmental technology area of emphasis will:

- Develop the educational and communication skills necessary to successfully enter and succeed in an agriculturally related career.
- Develop the academic knowledge and skills needed to enter and succeed in an agriculturally related career.
- Complete a twelve week internship in an area related to their career goal.

**AGEE 101.** Global Food and Agricultural Industry. 3 Hours.

Examination of the history and current developments, structures, functions, and importance of the international food and agricultural industry; issues, concerns and interrelationships and their impacts on American agriculture and society.

**AGEE 102.** Educational Colloquium in Agricultural and Extension Education. 1 Hour.

Components of and requirements for majoring in agricultural and extension education, including specializations, professional organizations, avenues to program completion, and requirements to be gainfully employed.

**AGEE 103.** Basics of Agricultural Mechanization. 2 Hours.

Study and application of the foundation area associated with agricultural mechanization.

**AGEE 110.** Microcomputer Applications in Agricultural Education. 3 Hours.

PR: Consent. Microcomputer applications in the instructional process of agricultural education; use of applications software, agricultural software, and data bases; and methods of integrating microcomputers into secondary school agriculture and extension programs.

**AGEE 191.** First-Year Seminar. 1-3 Hours.

Engages students in active learning strategies that enable effective transition to college life at WVU. Students will explore school, college and university programs, policies and services relevant to academic success. Provides active learning activities that enable effective transition to the academic environment. Students examine school, college and university programs, policies and services.

**AGEE 202.** Site Based Tutoring in Agriculture and Extension Education. 1 Hour.

Application of models and paradigms of learning in the content area through tutoring of individuals and small groups in an assigned public school setting.
AGEE 203. Agriculture Mechanics Practica. 3 Hours.
Theory and practice of designing and constructing structures, electrical circuits, masonry, equipment maintenance, and surveying.

AGEE 220. Group Organization and Leadership. 3 Hours.
Study of the impact of leaders and organized groups on societies. Role of groups in conveying cultural norms. Principles and techniques involved in forming and directing organizations in providing effective leadership.

AGEE 280A. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design or construction. 1-4 hr. conference.

AGEE 280B. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280C. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280D. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280E. 1-4 Hours.
AGEE 280E. Agricultural Mechanics Problem. 1-4 hr. PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280F. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280G. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280H. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280I. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280J. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280K. 1-4 Hours.
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AGEE 280L. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280M. 1-4 Hours.
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AGEE 280N. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280O. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280P. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280Q. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280R. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280S. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280T. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280U. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280V. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280W. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.
AGEE 280X. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280Y. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 280Z. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. 1-4 hr. conference.

AGEE 293. Special Topics. 1-6 Hours.
PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AGEE 298. Honors. 1-3 Hours.
PR: Students in Honors Program and consent by the honors director. Independent reading, study, or research.

AGEE 303. Small Engines and Hydraulics. 3 Hours.
Theory and practice of disassembling, assembling and maintaining small gasoline engines and hydraulic devices.

AGEE 305. Metal Fabrication. 3 Hours.
Theory and practice of the fusion of metals. Advancing the science, technology and application of welding and allied processes including: joining, brazing, soldering, and cutting.

AGEE 330. Shop Theory and Methods. 3 Hours.
PR: AGEE 103 and AGEE 203. Methods of teaching agricultural mechanics including laboratory safety, organization and supervision.

AGEE 393. Special Topics. 1-6 Hours.
PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AGEE 421. Agricultural and Natural Resource Communications. 3 Hours.
Procedures and practices in developing, interpreting, and communicating agricultural and natural resource information; emphasis on visual materials and effective presentations. (3 hr. lec.).

AGEE 426. Directing Future Farmers of America and Supervised Agricultural Experiences. 3 Hours.
This course is specifically designed for students preparing to teach agricultural science in the public schools. Focus will be on planning, advising, supervising and evaluating student educational experiences through FFA and supervised agricultural experience programs.

AGEE 430. Methods of Teaching Agriculture. 3 Hours.

AGEE 431. Adult Education in Agriculture and Natural Resources. 2 Hours.
PR: Consent. Planning and preparation for teaching adult classes and advising agricultural organizations.

AGEE 434. Managing Learning Environment. 3 Hours.
PR: AGEE 430 or consent. Principals/process in organizing and managing all components of the secondary agricultural education learning environment to maximize student achievement.

AGEE 438. Agriculture Education Curriculum Development. 2 Hours.

AGEE 440. Principles of Cooperative Extension. 2 Hours.
PR: Consent. History, philosophy, and mission of the cooperative extension service. Roles and functions of extension faculty in developing and presenting extension programs.

AGEE 441. Methods in Extension Education. 2 Hours.

AGEE 452. Advanced Farm Machinery. 3 Hours.
Systems approach to selection, use and operation of machinery related to agriculture, forestry and other rural activities. Emphasis on safety and environmental impact. Use of records for management decisions, purchase, replacement, sale, or overhaul. (2 hr. rec., 3 hr. lab.).

AGEE 454. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454A. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design or construction. (1-4 hr. conference.).

AGEE 454B. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design or construction. (1-4 hr. conference.).

AGEE 454C. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454D. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).
AGEE 454E. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454F. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454G. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454H. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454I. Agricultural Mechanics Problems. 1-4 Hours.
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AGEE 454K. Agricultural Mechanics Problems. 1-4 Hours.
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AGEE 454L. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454M. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454N. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454O. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454P. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454Q. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454R. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454S. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454T. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454U. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454V. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454W. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454X. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 454Z. Agricultural Mechanics Problems. 1-4 Hours.
PR: C or better in an AGEE course. Special projects and problems in theoretical analysis, design, or construction. (1-4 hr. conference.).

AGEE 460. Engineering Technology for Urban Watersheds and Irrigation. 3 Hours.
Soil and water management; analysis of small watersheds and design of waterways, culverts, ponds, sediment basins, and turf irrigation systems. (3 hr. lec.).

AGEE 461. Waste Management-Composting. 3 Hours.
Both present and alternative waste management strategies will be examined. Students will learn how to analyze the waste stream and be able to develop management concepts which are both economically and environmentally sound. Lectures by waste management professionals will be integrated into the class to expose the students to the very latest practices and technology.

AGEE 488. Professional Agricultural Internship. 1-12 Hours.
PR: Consent.
AGEE 489. Agriculture and Extension Education Reflective Seminar. 1 Hour.
Provides opportunities for students to examine their field based experiences. Professional issues and problems are identified and discussed. Ethics and misconceptions about professional practice are examined.

AGEE 490. Teaching Practicum. 1-3 Hours.
PR: Consent. Teaching practice as a tutor or assistant.

AGEE 491. Professional Field Experience. 1-18 Hours.
PR: Consent. (May be repeated up to a maximum of 18 hours.) Prearranged experiential learning program, to be planned, supervised, and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

AGEE 492. Directed Study. 1-3 Hours.
Directed study, reading, and/or research.

AGEE 493. Special Topics. 1-6 Hours.
PR: Consent. Investigation of topics not covered in regularly scheduled courses.

AGEE 494. Seminar. 1-3 Hours.
PR: Consent. Presentation and discussion of topics of mutual concern to students and faculty.

AGEE 495. Independent Study. 1-6 Hours.
Faculty supervised study of topics not available through regular course offerings.

AGEE 496. Senior Thesis. 1-3 Hours.
PR: Consent.

AGEE 497. Research. 1-6 Hours.
Independent research projects.

AGEE 498. Honors. 1-3 Hours.
PR: Students in honors program and consent by the honors director. Independent reading, study or research.