

# ENTOMOLOGY, PLANT PATHOLOGY, and WEED SCIENCE

**Professor David Thompson, Department Chair**

**Professors** Byford, Ellington, Kemp, Kinzer, Schroeder, Sterling, Thomas

**Associate Professors** Bundy, Creamer, Pierce, Sanderson

**Assistant Professors** Hanson, Sanogo

**College Professor** Arnold

**College Associate Professor** Richman

**College Assistant Professor** Lewis

**Adjunct Professors** Banks, Berkson, Bleiweiss, Drake, Miller,

**(505) 646-3225**

**DEGREE: Bachelor of Science**

**MAJOR: Agricultural Biology**

**OPTION: Applied Biology**

**Entomology**

**Environmental Biology**

**Invasive Pest Biology and Management**

**MINORS: Pest Management**

**Entomology**

**Plant Pathology**

**Weed Science**

Specific courses that meet the university general education requirements and additional courses in biology, chemistry, mathematics, and seminar are included below in departmental requirements. A total of **128** credits are required for graduation. At least **54** credits must be 300-level courses and above. Schedules in specific semesters will be developed with the help of a student's academic adviser.

**DEGREE: Bachelor of Science**

**MAJOR: Agricultural Biology**

The agricultural biology course work prepares you for a variety of careers in the biological and agricultural sciences. You will develop your curriculum with an academic adviser to attain your individual goals. Many will pursue advanced degrees in the sciences or prepare for admittance to professional schools (medical, dental, etc.). A diverse program is offered with five separate options that allow you to tailor your program for careers in the commercial sector, such as agricultural consulting and pest management or for careers with county, state, or federal agencies, such as research technicians, land managers, and extension agents.

## Departmental Requirements

Courses marked with an asterisk (\*) are required to fulfill general education requirements.

ANSC/BIOL 305 Genetics	3
BIOL 111G, Natural History of Life, and BIOL 211G, Cellular and Organismal Biology (Labs are optional; however, those in the Applied Biology option should sign up for labs BIOL 111L and BIOL 211L)	6
BIOL 311, General Microbiology	3
BIOL 313, Structure and Function of Plants or BIOL 322, Zoology	3
CHEM 111, 112, General Chemistry, I, II*	8
COMM 265G, Principles of Human Communication, or COMM 253G, Public Speaking, or AXED 201G, Effective Leadership and Communication in Agricultural Organizations*	3
ENGL 111G, Freshman Composition*	4
ENGL 311G, Advanced Composition, or ENGL 318G, Advanced Technical and Professional Communication*	3
EPWS 100, Introduction to Pest Management	3
EPWS 100L, Pest Management Laboratory	1
EPWS 301, Agricultural Biotechnology	3
EPWS 303, Economic Entomology	4
EPWS 310, Plant Pathology	4
EPWS 311, Weed Science	4
EPWS 447, Seminar	1
E ST311G, Statistical Applications	3
MATH 120, Intermediate Algebra	3

### General education electives from the following categories:

Humanities and fine arts	6-9
Social and behavioral sciences	6-9
<b>Total</b>	<b>15</b>

### Agricultural Biology Options

In addition to the departmental requirements listed above, you must also complete all of the courses in at least one of the options listed below. Courses with higher numbered prefixes may replace courses listed as departmental requirements in some cases. Courses marked with an asterisk (\*) are required to fulfill general education requirements.

**OPTION: Applied Biology/Preprofessional**

The Applied Biology option prepares you for professional advancement including admittance to medical, dental, veterinary, and graduate schools. Students interested in the health professions should register with the Health Professional Advisory Committee no later than the sophomore year. Students should check the specific entrance requirements for the professional or graduate school of their choice prior to selecting electives within this option.

BCHE 341, Survey of Biochemistry	4
CHEM 313, 314, 315, Organic Chemistry I, II, and Lab	8
MATH 121, College Algebra	3
MATH 190, Trig and Pre-Calculus	4
MATH 191, Calculus I	3
PHYS 211, 211L, General Physics I, General Physics I Laboratory	4

**Select two of the following courses:**

ANSC 370, Anatomy and Physiology of Farm Animals	6-8
BIOL 312, Plant Taxonomy	
BIOL 330, Comparative Anatomy and Embryology	
BIOL 354, Physiology of Humans	
BIOL 377, Cell Biology	
EPWS 314, Plant Physiology	
EPWS 373, Fungal Biology	
EPWS 434, Insect Taxonomy	
EPWS 481, Nematology	
EPWS 486, Plant Virology	

**Suggested electives:**

MATH 192, Calculus II, PHYS 212, General Physics II

**OPTION: Environmental Biology**

The Environmental Biology option prepares you for professional positions in environmental impact, regulation, compliance, and improvement.

AGHE 380G, Ecosystem Earth	3
CH E 330, CH E 430, Environmental Seminars I, II	2
CHEM 211, Organic Chemistry	3
EPWS 314, Plant Physiology	3
EPWS 451, Special Topics, Environmental Biology	3
MATH 142G, Calculus for Biological and Management Sciences I*	3
PHYS 211, 211L, General Physics I	4
SOIL 252, Soils	3
TOX 361, Basic Toxicology	3
EPWS 492, Diagnosing Plant Disorders	3

**Select at least two of the following:**

SOIL 257, Meteorology	3
AGRO 365, Crop Production	3
EPWS 420, Pesticides in the Environment	3
SOIL 312, Soil Management and Fertility	3
ES 301, Principles of Ecology or RGSC 317, Rangeland Communities Ecology	3
ES 370, Environment Soil Science	3
TOX 423, Environmental Toxicology	3
EST 456, Statistical Methods and Data Analysis	3
BCHE 341, Survey of Biochemistry	3
AGRO 365, Crop Production	3
AGRO 471, Plant Mineral Nutrition	3
GEOG 381, Cartography and Geographic Information System	3
PHIL 240G, Ethics for Engineering and Scientific Careers, or PHIL 322, Environmental Ethics, or SOC 465G, Environmental Sociology	3

**OPTION: Entomology**

This option prepares you for graduate degrees in entomology.

Emphasis is placed on a broad background in field and laboratory aspects of insect biology and management.

AGRO 471, Plant Mineral Nutrition, or AGRO 365, Crop Production	3
CHEM 313, 314, 315, Organic Chemistry I, II, and Lab	8
BCHE 341, Survey of Biochemistry	3
EPWS 314, Plant Physiology	3
EPWS 434, Insect Taxonomy, or EPWS 451, Special Topics or Immature Insects	3
EPWS 455, Advanced Integrated Pest Management, or EPWS 456, Biological Control	3
EPWS 462, Parasitology	3
EPWS 481, Nematology	3
EPWS 491, Insect Physiology	3
EPWS 492, Diagnosing Plant Disorders	3
MATH 142G, Calculus for Biological and Management Sciences I*	3
PHYS 110G, Introduction to Physics or above	4
SOIL 252, Soils	3

**OPTION: Invasive Pest Biology and Management**

This option prepares you for careers such as insect, weed, and disease management, research technician, federal and state agencies, border security, agricultural consulting, and extension positions.

CHEM 211, Organic Chemistry	4
MATH 142G, Calculus for Biological and Management Science I*	3
PHYS 110G, Introduction to Physics or above	4
SOIL 252, Soils	3
SOIL 312, Soil Management and Fertility	4
EPWS 314, Plant Physiology	3
TOX 361, Basic Toxicology	
EPWS 455, Advanced Integrated Pest Management, or EPWS 456, Biological Control	3
EPWS 481, Plant Nematology, or EPWS 462 Parasitology	3
EPWS 492, Diagnosing Plant Disorders	3

**Select at least one of the following:**

RGSC 307, Rangeland Grasses	3
RGSC 316, Rangeland Plants	2
BIOL 312, Plant Taxonomy	3
EPWS 434, Insect Taxonomy	3

**Select at least one of the following:**

AGRO 471, Plant Mineral Nutrition	4
AGRO 365, Principles of Crop Production	4
RGSC 317, Rangeland Communities	3
BIOL 301, Principles of Ecology	3
EPWS 420, Environmental Fate of Pesticides	3

**MINORS:** These are options for students majoring in another department and will require students to get a minor form from an EPPWS advisor and complete it prior to graduation. Courses marked with † are required for the minor.

**MINOR: Pest Management (18 credits)**

EPWS 100, Introduction to Pest Management	3
EPWS 100L, Introduction to Pest Management Lab	1
†EPWS 303, Economic Entomology	4
†EPWS 310, Plant Pathology	4
†EPWS 311, Weed Science	4
EPWS 434, Insect Taxonomy	3
Upper-division EPWS course(s)	3-6

**MINOR: Entomology (18 credits)**

EPWS 100, Introduction to Pest Management	3
EPWS 100L, Introduction to Pest Management Lab	1
†EPWS 303, Economic Entomology	4
EPWS 434, Insect Taxonomy	3
EPWS 451, Special Topics	3-9
EPWS 455, Advanced Integrated Pest Management	3
EPWS 456, Biological Control	3
EPWS 462, Parasitology	3
EPWS 491, Insect Physiology	3

**MINOR: Plant Pathology (18 credits)**

BIOL 311, General Microbiology	3
BIOL 311L, General Microbiology Lab	1
EPWS 100, Introduction to Pest Management Lab	3
EPWS 100L, Introduction to Pest Management Lab	1
†EPWS 310, Plant Pathology	4
EPWS 314, Plant Physiology	3
†EPWS 481, Plant Virology	3
†EPWS 373, Fungal Biology	3
†EPWS 481, Plant Nematology	3
EPWS 492, Diagnosing Plant Disorders	3

**MINOR: Weed Science (18 credits)**

BIOL 312, Plant Taxonomy	4
BIOL 470, Plant Community Ecology	3
EPWS 100, Introduction to Pest Management	3
EPWS 100L, Introduction to Pest Management Lab	1
†EPWS 311, Weed Science	4
†EPWS 314, Plant Physiology	3
†EPWS 449, Special Problems in Weed Science	1-3
EPWS 452, Applied Pesticide Toxicology	3