

APPLIED AND AGRICULTURAL BIOLOGY (INVASIVE PEST BIOLOGY AND MANAGEMENT) - BACHELOR OF SCIENCE IN AGRICULTURE

The agricultural biology course work prepares you for a variety of careers in the biological sciences and agriculture. You will develop your curriculum with an academic advisor 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 concentrations 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. A minimum of 120 credit hours is required for graduation. Any undergraduate student majoring in Agricultural Biology must earn a grade of C- or higher in core (EPWS prefix) courses to satisfy degree requirements. Students earning a D or F in a core (EPWS prefix) course will be expected to repeat that course until the student earns a grade of C- or higher. The following courses are required for a major in Agricultural Biology.

The Pest Biology and Management concentration prepares you for careers such as insect, weed and disease management; in both field and urban environments, including IPM and Sustainable/Organic Techniques research technician; federal and state agencies; border security; agricultural consulting; and extension positions.

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
<i>Area I: Communications</i>		
<i>English Composition - Level 1</i>		
ENGL 1110G or ENGL 1110H	Composition I Composition I Honors	4
<i>English Composition - Level 2</i>		
Choose one from the following:		3
ENGL 2130G	Advanced Composition	
ENGL 2210G	Professional and Technical Communication	
ENGL 2210H	Professional and Technical Communication	
ENGL 2215G	Advanced Technical and Professional Communication	
<i>Oral Communication</i>		
Choose one from the following:		3
ACOM 1130G	Effective Leadership and Communication in Agriculture	
COMM 1115G or HNRS 2175G	Introduction to Communication Introduction to Communication Honors	

COMM 1130G	Public Speaking	
<i>Area II: Mathematics</i>		
MATH 1220G	College Algebra ²	3
<i>Area III/IV: Laboratory Sciences and Social/Behavioral Sciences</i>		
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	11
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	
<i>Area IV: Social/Behavioral Sciences Course (3 Credits) ²</i>		
<i>Area V: Humanities ²</i>		3
<i>Area VI: Creative and Fine Arts ²</i>		3
<i>General Education Elective</i>		
BIOL 2610G	Principles of Biology: Biodiversity, Ecology, and Evolution	3
Viewing a Wider World		6
One must be from outside the College of ACES		
Departmental/College Requirements		
CHEM 1215G, CHEM 1225G and BIOL 2610G will count towards Departmental/College and General Education Requirements		
A ST 311	Statistical Applications	3
AGRO 305	Principles of Genetics	3
BIOL 2110G	Principles of Biology: Cellular and Molecular Biology	3
BIOL 311	General Microbiology	3
BIOL 313 or BIOL 322	Structure and Function of Plants Zoology	3
EPWS 1110	Applied Biology	3
EPWS 1110L	Applied Biology Lab	1
EPWS 301	Agricultural Biotechnology	3
EPWS 302	General Entomology	4
EPWS 310	Plant Pathology	4
EPWS 311	Introduction to Weed Science	4
EPWS 447	Seminar	1
<i>Concentration Coursework</i>		
EPWS 314	Plant Physiology	3
EPWS 455	Advanced Integrated Pest Management	3
CHEM 2120	Integrated Organic Chemistry and Biochemistry (CHEM 2120 must be taken in association with 1-cr Lab)	3
EPWS 462	Parasitology	3
EPWS 492	Diagnosing Plant Disorders	3
MATH 1430G	Applications of Calculus I	3
PHYS 1230G & PHYS 1230L	Algebra-Based Physics I and Algebra-Based Physics I Lab	4
SOIL 2110	Introduction to Soil Science	3
SOIL 312	Soil Management and Fertility	3
TOX 361	Basic Toxicology	3
Select one from the following:		3
BIOL 312	Plant Taxonomy	
RGSC 316	Rangeland Plants	
RGSC 325	Rangeland Restoration Ecology	
Select 3 credits from the following:		3
EPWS 451	Special Topics	
EPWS 486	Plant Virology	
AGRO 365	Principles of Crop Production	
AGRO 471	Plant Mineral Nutrition	
BIOL 301	Principles of Ecology	
RGSC 317	Rangeland Communities	

Second Language: (not required)	
Electives, to bring the total credits to 120⁴	9
Total Credits	120

¹ See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses

² MATH 1220G College Algebra is required for the degree but students may need to take any prerequisites needed to enter MATH 1220G College Algebra first.

³ See the Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) section of the catalog for a full list of courses

⁴ Elective credit may vary based on prerequisites, dual credit, AP credit, double majors, and/or minor coursework. The amount indicated in the requirements list is the amount needed to bring the total to 120 credits and may appear in variable form based on the degree. However students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their advisor

A Suggested Plan of Study

This roadmap assumes student placement in MATH 1220G College Algebra and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and English. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

First Year		
Fall		Credits
MATH 1220G	College Algebra	3
EPWS 1110 & 1110L	Applied Biology and Applied Biology Lab	4
ENGL 1110G or ENGL 1110H	Composition I or Composition I Honors	4
ACES 1120	Freshman Orientation	1
General Education Course (Area V, VI, or VI) ¹		3
Credits		15
Spring		
ACOM 1130G or COMM 1115G	Effective Leadership and Communication in Agriculture or Introduction to Communication	3
ENGL 2210G or ENGL 2210H	Professional and Technical Communication or Professional and Technical Communication	3
BIOL 2610G	Principles of Biology: Biodiversity, Ecology, and Evolution	3
General Education Course (Area V, VI, or VI) ¹		3
General Education Course (Area V, VI, or VI) ¹		3
Credits		15

Second Year		
Fall		
MATH 1430G	Applications of Calculus I	3
BIOL 2110G	Principles of Biology: Cellular and Molecular Biology	3
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	4

Elective Course		3
Credits		13
Spring		
A ST 311	Statistical Applications	3
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	4
BIOL 311	General Microbiology	3
BIOL 313	Structure and Function of Plants	3
Viewing A Wider World ²		3
Credits		16
Third Year		
Fall		
Concentration Coursework		4
EPWS 302	General Entomology	4
SOIL 2110	Introduction to Soil Science	3
PHYS 1230G & PHYS 1230L	Algebra-Based Physics I and Algebra-Based Physics I Lab	4
Credits		15
Spring		
EPWS 301	Agricultural Biotechnology	3
EPWS 314	Plant Physiology	3
EPWS 462	Parasitology	3
TOX 361	Basic Toxicology	3
Viewing a Wider World ²		3
Credits		15
Fourth Year		
Fall		
EPWS 310	Plant Pathology	4
EPWS 311	Introduction to Weed Science	4
Elective Course		1
BIOL 312	Plant Taxonomy	3
EPWS 492	Diagnosing Plant Disorders	3
Credits		15
Spring		
AGRO 305	Principles of Genetics	3
AGRO 471	Plant Mineral Nutrition	3
EPWS 447	Seminar	1
EPWS 455	Advanced Integrated Pest Management	3
EPWS 420	Environmental Behavior of Pesticides	3
SOIL 312	Soil Management and Fertility	3
Credits		16
Total Credits		120

¹ See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.

² See the Viewing a Wider World (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext>) section of the catalog for a full list of courses.