

# College of Agriculture

## College of Agriculture

### Overview

Purdue Agriculture is one of the world's leading colleges that offers food, agricultural, and natural resources programs. We train the next generation, who will drive innovation and discovery to reshape life sciences, biosecurity, the environment, agriculture, and the food system. Purdue Agriculture graduates are in great demand. During the past two decades, more than 90 percent of our graduates were employed or were enrolled in graduate or professional schools within three months of graduation.

### Undergraduate Degree

Your undergraduate program will blend courses and experiences in your major with preparation in the life and physical sciences, written and oral communication, social sciences and humanities, multicultural awareness, and international understanding. Professional work experiences, leadership development, participation in student organizations, study abroad, and directed research can add to your professional development.

### Graduate Degree

Your master's or doctoral program will be specialized and flexible to prepare you to meet your professional objectives. You'll find that we offer a growing number of multidisciplinary graduate degree programs, using directed experiences and courses from faculty members in one or more Purdue departments or colleges. Business and industry, government, and academic institutions throughout the world recruit our graduates for leading positions.

## College of Agriculture Undergraduate Admissions (website)

### Admission to Teacher Education

### Advising

Department	Contact	Phone Number	
Department of Agricultural and Biological Engineering	Brenda Schroeder	765-494-3060	bre
Department of Agricultural Economics	LeeAnn Williams	765-494-4201	leew
Department of Agricultural Sciences Education and Communication	Agricultural Education - B. Allen Talbert	765-494-8433	btal
Department of Agronomy	Jane Wiercioch	765-494-4788	jwie
Department of Animal Sciences	Ashley York	765-494-4843	ash

Department	Contact	Phone Number	
Department of Biochemistry	Heidi Fornes	765-494-1612	hfor
Department of Botany and Plant Pathology	Darcy Allen	765-494-0352	dar
Department of Entomology	Amanda L. Wilson	765-494-9061	ape
Department of Food Science	Patrick Tiffany	765-494-2766	foo
Department of Forestry and Natural Resources	J. Barny Dunning	765-494-3565	jdun
Department of Horticulture and Landscape Architecture	Gloribel Rosales-Burdin	765-496-6433	hla
Natural Resources and Environmental Science	Mandy Chalk Marquardt	765-496-9024	chal
Pre-Veterinary Medicine	Tim Kerr	765-494-8481	prev

#### Contact Information

College of Agriculture  
615 Mitch Daniels Blvd.  
West Lafayette, IN 47907-2053  
Email: exp@purdue.edu  
Phone: 765-494-8470

## Baccalaureate

### Interdisciplinary Agriculture, BS

#### Degree Requirements

## 120 Credit Hours

#### Departmental/Program Major Courses (1 credit)

#### Required Courses (1 credit)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 1XXXX - Introduction to Departmental Academic Programs - Credit Hours: .50

#### Other Departmental/Program Course Requirements (92-94 credits)

- MA 15800 - Precalculus - Functions And Trigonometry or
- MA 16010 - Applied Calculus I

- AGEC 21700 - Economics
- BIOL 11000 - Fundamentals Of Biology I
- BIOL 11100 - Fundamentals Of Biology II
- CHM 11100 - General Chemistry
- CHM 11200 - General Chemistry
- STAT 30100 - Elementary Statistical Methods
- Agriculture Selective - Credit Hours: 15.00
- Agriculture Selective (30000+ level) - Credit Hours: 21.00
- Mathematics or Science Selective - Credit Hours: 9.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Science, Technology and Society - Credit Hours: 3.00 (satisfies Science, Technology, & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (25-27 credits)

- Electives - Credit Hours: 25.00-27.00

## Supplemental List

Interdisciplinary Agriculture Supplemental Information

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.00 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- Baccalaureate degree plans of study must include a capstone course or experience. Capstone course credits also may be used to fulfill core curriculum requirements or departmental requirements or electives.

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency [website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 1XXXX - Introduction to Departmental Academic Programs - Credit Hours: .50
- BIOL 11000 - Fundamentals Of Biology I
- CHM 11100 - General Chemistry
- Agricultural Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- BIOL 11100 - Fundamentals Of Biology II
- CHM 11200 - General Chemistry
- MA 15800 - Precalculus - Functions And Trigonometry or
- MA 16010 - Applied Calculus I
- Agricultural Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

### 16 Credits

### Fall 2nd Year

- AGE 21700 - Economics
- Agricultural Selective - Credit Hours: 3.00
- Human Cultures: Humanities - Credit Hours: 3.00
- Mathematics and Science Selective - Credit Hours: 3.00

- Oral Communication Selective - Credit Hours: 3.00

## 15 Credits

### Spring 2nd Year

- STAT 30100 - Elementary Statistical Methods
- Agricultural Selective - Credit Hours: 6.00
- Science, Technology & Society Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 3rd year

- Agricultural Selective (30000+ Level) - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Mathematics and Science Selective - Credit Hours: 6.00
- Written or Oral Communication Selective (20000+ Level) - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- Agricultural Selective (30000+ Level) - Credit Hours: 6.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 6.00

## 15 Credits

### Fall 4th Year

- Agricultural Selective (30000+ Level) - Credit Hours: 6.00
- Elective - Credit Hours: 9.00

## 15 Credits

### Spring 4th Year

- Agricultural Selective (30000+ Level) - Credit Hours: 6.00
- Humanities or Social Science Selective (30000+ Level) - Credit Hours: 3.00
- Elective - Credit Hours: 5.00-6.00

## 14-15 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## College of Agriculture Administration

### About Agricultural Administration

Purdue University's College of Agriculture is one of the world's leading colleges of agricultural, food, life, and natural resource sciences. As a land-grant institution, we are committed to preparing our students to make a difference, wherever their careers take them; stretching the frontiers of science to find solutions to some of our most pressing global challenges; and, through Purdue Extension and engagement programs, helping the people of Indiana, the nation and the world improve their lives and livelihoods.

Also housed within the College of Agriculture Office of Academic Programs are interdisciplinary degrees, minors, certificates, and pre-programs. See below for more detailed information.

### College of Agriculture Academic Programs (website)

Interdisciplinary Agriculture, BS Students are not admitted directly into this major. See your advisor for more information.

# Contact Information

College of Agriculture  
615 Mitch Daniels Blvd.  
West Lafayette, IN 47907-2053  
Email: [exp@purdue.edu](mailto:exp@purdue.edu)  
Phone: 765-494-8470

## Natural Resources and Environmental Science

NRES is a unique and exciting major for students who want to contribute to environmental change in the world. It is an interdisciplinary applied science-based program that focuses on environmental restoration, management, policy, and science. With guidance from your advisor, you will design a plan of study in one of six concentrations.

## **Baccalaureate**

### **Natural Resources and Environmental Science: Climate and Energy Solutions Concentration, BS**

#### About the Program

Natural Resources and Environmental Science (NRES) is an interdisciplinary program that combines broad environmental knowledge and technical competency, with understanding of the economic, policy and human factors of environmental management to develop graduates who are well-equipped to deal with the environmental challenges of the 21st century. Students can choose from one of six concentration areas: energy and climate solutions, environmental



policy and analysis, watershed management, environmental quality and restoration, sustainability science or emerging environmental challenges. NRES graduates work in an exciting variety of environmentally related careers in the public and private sector, including state and federal agencies, consulting firms and non-profits.

Students in the Climate and Energy Solutions Concentration choose 21 credit hours of course work to support evaluation of climate impacts, adaptation and mitigation, and alternative energy solutions.

Natural Resources and Environmental Science Website

Natural Resources and Environmental Science Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (35 credits)

### Required Major Courses (11 credits)

- AGRY 12500 - Environmental Science And Conservation or
- EAPS 12500 - Environmental Science And Conservation or
- FNR 12500 - Environmental Science And Conservation or
- NRES 12500 - Environmental Science And Conservation (satisfies Science, Technology, and Society for core)
- NRES 20000 - Introduction To Environmental Careers
- NRES 25500 - Soil Science or
- AGRY 27000 - Forest Soils
- NRES 33800 - Environmental Field Skills or
- AGRY 33800 - Environmental Field Skills
- NRES 42000 - Environmental Internship Reporting (Capstone)
- NRES 49700 - Current Topics In Environmental Sciences (Capstone)

## Climate and Energy Solutions Concentration Courses (24 credits)

### Climate And Energy Solutions Required Courses (12 credits)

- AGRY 33500 - Weather And Climate or
- NRES 23000 - Survey Of Meteorology
- EAPS 22500 - Science Of The Atmosphere
- MA 16020 - Applied Calculus II
- POL 32700 - Global Green Politics

### Climate and Energy Solutions Selective Courses (12 credits)

- AD 39700 - Sustainability In The Built Environment
- ANTH 21000 - Technology And Culture
- ASEC 35500 - Controversial Science And Media In The Public Sphere

- EAPS 10900 - The Dynamic Earth
- EAPS 31500 - Biogeochemistry
- EAPS 32700 - Climate, Science And Society
- EAPS 37500 - Great Issues - Fossil Fuels, Energy And Society
- EAPS 42000 - Global Change Modeling
- EAPS 53000 - Extreme Weather And Climate: Science And Risk
- ECET 22400 - Electronic Systems
- EPCS 40100 - Senior Participation In EPICS or
- EPCS 40200 - Senior Participation In EPICS
- EEE 35500 - Engineering Environmental Sustainability
- MET 53000 - Facilities Engineering Technology
- NRES 38010 - Hazardous Waste Handling
- PHIL 40300 - Moral Psychology And Climate Change
- POL 42800 - The Politics Of Regulation

## Other Departmental/Program Course Requirements (69-75 credits)

- AGECE 40600 - Natural Resource And Environmental Economics
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- BIOL 28600 - Introduction To Ecology And Evolution
- FNR 21000 - Natural Resource Information Management
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- BIOL 11000 - Fundamentals Of Biology I or
- BTNY 12000 - Principles Of Plant Biology I
- BIOL 11100 - Fundamentals Of Biology II or
- BTNY 12100 - Principles Of Plant Biology II
- CHM 11100 - General Chemistry or
- CHM 11500 - General Chemistry (satisfies Science #1 for core)
- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry (satisfies Science #2 for core)
- CHM 25500 - Organic Chemistry For The Life Sciences I or
- CHM 25700 - Organic Chemistry
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 37500 - Human Dimensions of Natural Resource Management or
- SOC 34400 - Environmental Sociology
- **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- Science Communication Selective - Credit Hours: 3.00
- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing

- ENTM 20100 - Scientific And Technical Communication  
**Oral Communication Selective** - Credit Hours: 3.00 (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills  
**Written Communication Selective** - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Broadening Science Selective - Credit Hours: 1.00-3.00
- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Social Sciences Selective - Credit Hours: 3.00 (any AGECE, ANTH, ECON, EDPS, POL, PSY, SOC course from the AG Humanities/Social Science list)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (10-16 credits)

- Electives - Credit Hours: 10.00-16.00

## Supplemental Lists

Selective courses: Natural Resources and Environmental Science Supplemental Information

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

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- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- MA 16010 - Applied Calculus I
- NRES 12500 - Environmental Science And Conservation
- CHM 11100 - General Chemistry *or*
- CHM 11500 - General Chemistry
- COM 11400 - Fundamentals Of Speech Communication *or*
- COM 21700 - Science Writing And Presentation *or*
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- Elective - Credit Hours: 3.00

### 16-17 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry *or*
- CHM 11600 - General Chemistry
- ENGL 10600 - First-Year Composition *or*
- ENGL 10800 - Accelerated First-Year Composition *or*
- HONR 19903 - Interdisciplinary Approaches In Writing
- MA 16020 - Applied Calculus II
- Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

### 14-17 Credits

### Fall 2nd Year

- FNR 22310 - Introduction To Environmental Policy *or*
- POL 22300 - Introduction To Environmental Policy
- BIOL 11000 - Fundamentals Of Biology I *or*
- BTNY 12000 - Principles Of Plant Biology I
- NRES 25500 - Soil Science *or*
- AGRY 27000 - Forest Soils

- NRES 20000 - Introduction To Environmental Careers
- STAT 30100 - Elementary Statistical Methods
- Broadening Science Selective - Credit Hours: 1:00-3:00

## 15-17 Credits

### Spring 2nd Year

- AGRY 33800 - Environmental Field Skills or
- NRES 33800 - Environmental Field Skills
- AGRY 33500 - Weather And Climate or
- NRES 23000 - Survey Of Meteorology
- BIOL 11100 - Fundamentals Of Biology II or
- BTNY 12100 - Principles Of Plant Biology II
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 4.00

## 15 Credits

### Fall 3rd Year

- NRES 42000 - Environmental Internship Reporting
- POL 32700 - Global Green Politics
- **Microeconomics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- CHM 25500 - Organic Chemistry For The Life Sciences I or
- CHM 25700 - Organic Chemistry
- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16-17 Credits

### Spring 3rd Year

- BIOL 28600 - Introduction To Ecology And Evolution
- FNR 21000 - Natural Resource Information Management

- FNR 37500 - Human Dimensions of Natural Resource Management or
- SOC 34400 - Environmental Sociology
- Climate and Energy Concentration Selective - Credit Hours: 3.00

## 14 Credits

### Fall 4th Year

- AGECE 40600 - Natural Resource And Environmental Economics  
Science Communication Selective - Credit Hours: 3.00
- ASEC 58500 - Science Communication or
- ENGL 42000 - Business Writing or
- ENGL 42100 - Technical Writing or
- ENTM 20100 - Scientific And Technical Communication
- Climate and Energy Concentration Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 12 Credits

### Spring 4th Year

- NRES 49700 - Current Topics In Environmental Sciences
- Climate and Energy Concentration Selective - Credit Hours: 3.00
- Climate and Energy Concentration Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Electives - Credit Hours: 1.00-6.00

## 12-17 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Natural Resources and Environmental Science: Emerging Environmental Challenges Concentration, BS

### About the Program

Natural Resources and Environmental Science (NRES) is an interdisciplinary program that combines broad environmental knowledge and technical competency, with understanding of the economic, policy and human factors of environmental management to develop graduates who are well-equipped to deal with the environmental challenges of the 21st century. Students can choose from one of six concentration areas: energy and climate solutions, environmental policy and analysis, watershed management, environmental quality and restoration, sustainability science or emerging environmental challenges. NRES graduates work in an exciting variety of environmentally related careers in the public and private sector, including state and federal agencies, consulting firms and non-profits.

Students selecting Emerging Environmental Challenges work with the faculty directors to build a meaningful plan of study in an environmental focus area of their choosing.

Natural Resources and Environmental Science Website

Natural Resources and Environmental Science Major Change (CODO) Requirements

### Degree Requirements

## 120 Credits Required

### Departmental/Program Major Courses (35 credits)

#### Required Major Courses (11 credits)

- AGRY 12500 - Environmental Science And Conservation or
- EAPS 12500 - Environmental Science And Conservation or
- FNR 12500 - Environmental Science And Conservation or
- NRES 12500 - Environmental Science And Conservation (satisfies Science, Technology & Society Selective for core)



- NRES 20000 - Introduction To Environmental Careers
- NRES 25500 - Soil Science ♦ or
- AGRY 27000 - Forest Soils ♦
- NRES 33800 - Environmental Field Skills or
- AGRY 33800 - Environmental Field Skills
- NRES 42000 - Environmental Internship Reporting (Capstone)
- NRES 49700 - Current Topics In Environmental Sciences (Capstone)

## Emerging Environmental Challenges Concentration Courses (24 credits)

- Additional Mathematics or Statistics Selective - Credit Hours: 3.00
- Emerging Environmental Challenges Selective - Credit Hours: 21.00

## Other Departmental /Program Course Requirements (69-75 credits)

- AGECE 40600 - Natural Resource And Environmental Economics ♦
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- BIOL 28600 - Introduction To Ecology And Evolution ♦
- FNR 21000 - Natural Resource Information Management
  
- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11100 - General Chemistry or
- CHM 11500 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry ♦
  
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology ♦
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Oral Communication Selective** ♦ - Credit Hours: 3.00 (satisfies Oral Communication for core)
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- COM 21700 - Science Writing And Presentation
- COM 11400 - Fundamentals Of Speech Communication

Science Communication Selective - Credit Hours: 3.00

- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication
- **Written Communication Selective ♦** - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Broadening Science Selective - Credit Hours: 1.00-3.00
- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Sciences Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective (30000+ level) - Credit Hours: 3.00
- Social Sciences Selective - Credit Hours: 3.00 (any AGECE, ANTH, ECON, EDPS, POL, PSY, SOC course from the AG Humanities/Social Science list)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (10-16 credits)

- Electives - Credit Hours: 10.00-16.00

## Supplemental Lists

Selective courses: Natural Resources and Environmental Science Supplemental Information

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or

- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- CHM 11100 - General Chemistry ♦ or
- CHM 11500 - General Chemistry
- MA 16010 - Applied Calculus I ♦
- NRES 12500 - Environmental Science And Conservation  
**Oral Communication Selective** ♦ - Credit Hours: 3.00
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- Elective - Credit Hours: 3.00-4.00

### 16-18 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦ or
- CHM 11600 - General Chemistry  
**Written Communication Selective** ♦ - Credit Hours: 3.00-4.00
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Additional Mathematics or Statistics Selective - Credit Hours: 3.00
- Social Sciences Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-4.00

### 14-18 Credits

### Fall 2nd Year

- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I
- AGRY 27000 - Forest Soils ♦ or
- NRES 25500 - Soil Science ♦
  
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy ♦
  
- STAT 30100 - Elementary Statistical Methods
- Broadening Science Selective - Credit Hours: 1.00-3.00

## 14-16 Credits

### Spring 2nd Year

- AGRY 33800 - Environmental Field Skills or
- NRES 33800 - Environmental Field Skills
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II ♦
  
- BIOL 28600 - Introduction To Ecology And Evolution ♦
- NRES 20000 - Introduction To Environmental Careers
- Emerging Environmental Challenges Concentration Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00-4.00

## 17-18 Credits

### Fall 3rd Year

- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry
- **Microeconomics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics ♦
  
- NRES 42000 - Environmental Internship Reporting
- Data Science Selective - Credit Hours: 3.00
- Emerging Environmental Challenges Concentration Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16-17 Credits

### Spring 3rd Year

- FNR 21000 - Natural Resource Information Management
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology ♦
- Emerging Environmental Challenges Concentration Selective - Credit Hours: 3.00
- Emerging Environmental Challenges Concentration Selective - Credit Hours: 3.00

## 12 Credits

### Fall 4th Year

- AGECE 40600 - Natural Resource And Environmental Economics ♦  
Science Communication Selective - Credit Hours: 3.00
- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication
- Emerging Environmental Challenges Concentration Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 12 Credits

### Spring 4th Year

- NRES 49700 - Current Topics In Environmental Sciences
- Emerging Environmental Challenges Selective - Credit Hours: 3.00
- Emerging Environmental Challenges Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Electives - Credit Hours: 2.00-4.00

## 13-15 Credits

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should

know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Pre-Requisite Information

For pre-requisite information, click here.

# Natural Resources and Environmental Science: Environmental Policy and Analysis Concentration, BS

## About the Program

Natural Resources and Environmental Science (NRES) is an interdisciplinary program that combines broad environmental knowledge and technical competency, with understanding of the economic, policy and human factors of environmental management to develop graduates who are well-equipped to deal with the environmental challenges of the 21st century.

Students can choose from one of six concentration areas: energy and climate solutions, environmental policy and analysis, watershed management, environmental quality and restoration, sustainability science or emerging environmental challenges. NRES graduates work in an exciting variety of environmentally related careers in the public and private sector, including state and federal agencies, consulting firms and non-profits.

Students in the Environmental Policy and Analysis Concentration choose 21 credit hours of course work in policy, management and economics in order to address environmental challenges.

Natural Resources and Environmental Science Website

Natural Resources and Environmental Science Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (35 credits)

### Required Major Courses (11 credits)

- AGRY 12500 - Environmental Science And Conservation or
- EAPS 12500 - Environmental Science And Conservation or

- FNR 12500 - Environmental Science And Conservation or
- NRES 12500 - Environmental Science And Conservation (satisfies Science, Technology & Society Selective for core)
- NRES 20000 - Introduction To Environmental Careers
- NRES 25500 - Soil Science ♦ or
- AGRY 27000 - Forest Soils ♦
- AGRY 33800 - Environmental Field Skills or
- NRES 33800 - Environmental Field Skills
- NRES 42000 - Environmental Internship Reporting (Capstone)
- NRES 49700 - Current Topics In Environmental Sciences (Capstone)

## Environmental Policy And Analysis Concentration Courses (24 credits)

### Required Concentration Courses (9 Credits)

- AGECE 52500 - Environmental Policy Analysis
- ASECE 58500 - Science Communication
- POL 32700 - Global Green Politics ♦

### Environmental Policy And Analysis Selectives (15 credits)

- Additional Mathematics or Statistics Selective - Credit Hours: 3.00
- Environmental Policy And Analysis Selectives - Credit Hours: 12.00

## Other Departmental/Program Course Requirements (69-75 credits)

- AGECE 40600 - Natural Resource And Environmental Economics ♦
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- BIOL 28600 - Introduction To Ecology And Evolution ♦
- FNR 21000 - Natural Resource Information Management
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core) or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 11600 - General Chemistry
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry ♦
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology ♦



- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Oral Communication ♦** - Credit Hours: 3.00 (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- **Science Communication Selective** - Credit Hours: 3.00
- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication
- **Written Communication Selective ♦** - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Broadening Science Selective - Credit Hours: 1.00-3.00
- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Social Science Selective - Credit Hours: 3.00 (any AGECE, ANTH, ECON, EDPS, POL, PSY, SOC course from the AG Humanities/Social Science list)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (10-16 credits)

- Electives - Credit Hours: 10.00-16.00

## Supplemental Information

Selective courses: Natural Resources and Environmental Science Supplemental Information

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00

- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)

- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency website.

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- CHM 11100 - General Chemistry ♦ or
- CHM 11500 - General Chemistry
- MA 16010 - Applied Calculus I
- NRES 12500 - Environmental Science And Conservation  
**Oral Communication ♦** - Credit Hours: 3.00
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- Elective - Credit Hours: 3.00-4.00

### 16-18 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦ or
- CHM 11600 - General Chemistry  
Written Communication Selective ♦ - Credit Hours: 3.00-4.00
- ENGL 10600 - First-Year Composition

- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Additional Mathematics or Statistic Selective - Credit Hours: 3.00
- Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-4.00

## 14-18 Credits

### Fall 2nd Year

- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I ♦
- NRES 25500 - Soil Science ♦ or
- AGRY 27000 - Forest Soils ♦
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- NRES 20000 - Introduction To Environmental Careers
- STAT 30100 - Elementary Statistical Methods
- Broadening Science Selective - Credit Hours: 1.00-3.00

## 15-17 Credits

### Spring 2nd Year

- AGRY 33800 - Environmental Field Skills or
- NRES 33800 - Environmental Field Skills
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II ♦
- Environmental Policy and Analysis Concentration Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00-4.00

## 14-15 Credits

### Fall 3rd Year

- NRES 42000 - Environmental Internship Reporting
- POL 32700 - Global Green Politics ♦
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry ♦
- **Microeconomics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics

- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16-17 Credits

### Spring 3rd Year

- ASEC 58500 - Science Communication
- BIOL 28600 - Introduction To Ecology And Evolution
- FNR 21000 - Natural Resource Information Management
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology ♦
- Environmental Policy and Analysis Concentration Selective - Credit Hours: 3.00

## 14 Credits

### Fall 4th Year

- AGECE 40600 - Natural Resource And Environmental Economics ♦
- AGECE 52500 - Environmental Policy Analysis
- Humanities or Social Sciences Selective - Credit Hours: 3.00

**Science Communication Selective** - Credit Hours: 3.00

- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication

## 12 Credits

### Spring 4th Year

- NRES 49700 - Current Topics In Environmental Sciences
- Environmental Policy and Analysis Concentration Selective - Credit Hours: 3.00
- Environmental Policy and Analysis Concentration Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-4.00

## 13-15 Credits

### Pre-Requisite Information

For pre-requisite information, [click here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# **Natural Resources and Environmental Science: Environmental Quality And Restoration Concentration, BS**

## About the Program

Natural Resources and Environmental Science (NRES) is an interdisciplinary program that combines broad environmental knowledge and technical competency, with understanding of the economic, policy and human factors of environmental management to develop graduates who are well-equipped to deal with the environmental challenges of the 21st century.

Students can choose from one of six concentration areas: energy and climate solutions, environmental policy and analysis, watershed management, environmental quality and restoration, sustainability science or emerging environmental challenges. NRES graduates work in an exciting variety of environmentally related careers in the public and private sector, including state and federal agencies, consulting firms and non-profits.

Students in the Environmental Quality and Restoration Concentration choose 21 credit hours of course work in soil physics, plant biology, and hazardous waste handling to allow for evaluation, remediation, restoration and preservation of air, water and soil resources.

Natural Resources and Environmental Science Website

Natural Resources and Environmental Science Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (35 credits)

### Required Major Courses (11 credits)

- AGRY 12500 - Environmental Science And Conservation or
- EAPS 12500 - Environmental Science And Conservation or
- FNR 12500 - Environmental Science And Conservation or
- NRES 12500 - Environmental Science And Conservation (satisfies Science, Technology & Society Selective for core)
- NRES 20000 - Introduction To Environmental Careers
- NRES 25500 - Soil Science ♦ or
- AGRY 27000 - Forest Soils ♦
- AGRY 33800 - Environmental Field Skills or
- NRES 33800 - Environmental Field Skills
- NRES 42000 - Environmental Internship Reporting (Capstone)
- NRES 49700 - Current Topics In Environmental Sciences (Capstone)

## Environmental Quality And Restoration Concentration Courses (24 credits)

### Required Concentration Courses (12 credits)

- AGRY 56000 - Soil Physics ♦
- BTNY 30500 - Plant Evolution And Taxonomy ♦
- NRES 38010 - Hazardous Waste Handling ♦
- Additional Mathematics or Statistics Selective - Credit Hours: 3.00

### Environmental Quality and Restoration Selective (12 credits)

- Environmental Quality and Restoration Selective - Credit Hours: 12.00

## Other Departmental/Program Course Requirements (69-75 credits)

- AGECE 40600 - Natural Resource And Environmental Economics ♦
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- BIOL 28600 - Introduction To Ecology And Evolution ♦
- FNR 21000 - Natural Resource Information Management
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
  
- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I ♦

- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core) or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 11600 - General Chemistry
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry ♦
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology ♦
- **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Oral Communication Selective ♦** - Credit Hours: 3.00 (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- Science Communication Selective - Credit Hours: 3.00
- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication
- **Written Communication Selective ♦** - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Broadening Science Selective - Credit Hours: 1.00-3.00
- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Social Science Selective - Credit Hours: 3.00 - (any AGECE, ANTH, ECON, EDPS, POL, PSY, SOC course from the AG Humanities/Social Science list)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (10-16 credits)

- Electives - Credit Hours: 10.00-16.00

## Supplemental Information

Selective courses: Natural Resources and Environmental Science Supplemental Information



## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- CHM 11100 - General Chemistry ♦ or
- CHM 11500 - General Chemistry
- MA 16010 - Applied Calculus I
- AGRY 12500 - Environmental Science And Conservation or
- EAPS 12500 - Environmental Science And Conservation or
- FNR 12500 - Environmental Science And Conservation or
- NRES 12500 - Environmental Science And Conservation
- **Oral Communication** - Credit Hours: 3.00
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills

- Elective - Credit Hours: 3.00-4.00

## 16-18 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry  
Written Communication Selective - Credit Hours: 3.00-4.00
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Additional Mathematics or Statistic Selective - Credit Hours: 3.00
- Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-4.00

## 14-18 Credits

### Fall 2nd Year

- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I ♦
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- NRES 25500 - Soil Science ♦ or
- AGRY 27000 - Forest Soils ♦
- NRES 20000 - Introduction To Environmental Careers
- STAT 30100 - Elementary Statistical Methods
- Broadening Selective - Credit Hours: 1.00-3.00

## 15-17 Credits

### Spring 2nd Year

- AGRY 33800 - Environmental Field Skills or
- NRES 33800 - Environmental Field Skills
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II ♦
- Environmental Quality and Restoration Concentration Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00-4.00

## 14-15 Credits

### Fall 3rd Year

- AGRY 56000 - Soil Physics ♦
- NRES 42000 - Environmental Internship Reporting
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry ♦  
**Microeconomics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16-17 Credits

### Spring 3rd Year

- BIOL 28600 - Introduction To Ecology And Evolution
- FNR 21000 - Natural Resource Information Management
- NRES 38010 - Hazardous Waste Handling
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology ♦
- Environmental Quality and Restoration Selective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- AGECE 40600 - Natural Resource And Environmental Economics ♦
- BTNY 30500 - Plant Evolution And Taxonomy  
**Science Communication Selective** - Credit Hours: 3.00
- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication
- Humanities or Social Science Selective - Credit Hours: 3.00

## 12 Credits

### Spring 4th Year

- NRES 49700 - Current Topics In Environmental Sciences
- Environmental Quality and Restoration Concentration Selectives - Credit Hours: 3.00
- Environmental Quality and Restoration Concentration Selectives - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Electives - Credit Hours: 2.00-4.00

## 13-15 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Natural Resources and Environmental Science: Sustainability Science Concentration, BS**

### About the Program

Natural Resources and Environmental Science (NRES) is an interdisciplinary program that combines broad environmental knowledge and technical competency, with understanding of the economic, policy and human factors of environmental management to develop graduates who are well-equipped to deal with the environmental challenges of the 21st century.

Students can choose from one of six concentration areas: energy and climate solutions, environmental policy and analysis, watershed management, environmental quality and restoration, sustainability science or emerging environmental challenges. NRES graduates work in an exciting variety of environmentally related careers in the public and private sector, including state and federal agencies, consulting firms and non-profits.

Students in the Sustainability Science Concentration choose 21 credit hours of course work in sustainability, economics and life cycle analysis to minimize the depletion of natural resources in agriculture, industry and other sectors in order to balance environmental, social and economic considerations.

Natural Resources and Environmental Science Website

Natural Resources and Environmental Science Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (35 credits)

### Required Major Courses (11 credits)

- AGRY 12500 - Environmental Science And Conservation or
- EAPS 12500 - Environmental Science And Conservation or
- FNR 12500 - Environmental Science And Conservation or
- NRES 12500 - Environmental Science And Conservation (satisfies Science, Technology & Society Selective for core)
- AGRY 33800 - Environmental Field Skills or
- NRES 33800 - Environmental Field Skills
- NRES 20000 - Introduction To Environmental Careers
- NRES 25500 - Soil Science ♦ or
- AGRY 27000 - Forest Soils ♦
- NRES 42000 - Environmental Internship Reporting (Capstone)
- NRES 49700 - Current Topics In Environmental Sciences (Capstone)

## Sustainability Science Concentration Courses (24 credits)

### Required Concentration Courses (12 credits)

- EEE 35500 - Engineering Environmental Sustainability ♦
- EEE 43000 - Industrial Ecology And Life Cycle Analysis
- SFS 30200 - Principles Of Sustainability ♦
- Additional Mathematics or Statistics Selective - Credit Hours: 3.00

### Sustainability Science Concentration Selectives (12 credits)

- Sustainability Science Concentration Selective - Credit Hours:12.00

## Other Departmental/Program Course Requirements (69-75 credits)

- AGECE 40600 - Natural Resource And Environmental Economics ♦
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- BIOL 28600 - Introduction To Ecology And Evolution ♦

- FNR 21000 - Natural Resource Information Management
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core) or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 11600 - General Chemistry
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry ♦
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology ♦
- **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Oral Communication Selective** ♦ - Credit Hours: 3.00 (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- **Science Communication Selective** - Credit Hours: 3.00
- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication
- **Written Communication Selective** ♦ - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Broadening Science Selective - Credit Hours: 1.00-3.00
- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Social Science Selective - Credit Hours: 3.00 (any AGECE, ANTH, ECON, EDPS, POL, PSY, SOC course from the AG HUM/SOCIAL SCI list)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (10-16 credits)

- Electives - Credit Hours: 10.00-16.00

## Supplemental Information

Selective courses: Natural Resources and Environmental Science Supplemental Information

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements



## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- AGRY 12500 - Environmental Science And Conservation or
- EAPS 12500 - Environmental Science And Conservation or
- FNR 12500 - Environmental Science And Conservation or
- NRES 12500 - Environmental Science And Conservation
- CHM 11100 - General Chemistry or
- CHM 11500 - General Chemistry

- MA 16010 - Applied Calculus I  
**Oral Communication Selective** ♦ - Credit Hours: 3.00
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- Electives - Credit Hours 3.00-4.00

## 16-18 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry  
**Written Communication Selective** ♦ - Credit Hours: 3.00-4.00
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Additional Math or Statistic Selective - Credit Hours: 3.00
- Social Science Selective - Credit Hours: 3.00 (any AGECE, ANTH, ECON, EDPS, POL, PSY, SOC course from the AG HUM/SOCIAL SCI list)
- Elective - Credit Hours: 2.00-4.00

## 14-18 Credits

### Fall 2nd Year

- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I ♦
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- NRES 20000 - Introduction To Environmental Careers
- NRES 25500 - Soil Science ♦ or
- AGRY 27000 - Forest Soils ♦
- STAT 30100 - Elementary Statistical Methods
- Broadening Science Selective - Credit Hours: 1.00-3.00

## 15-17 Credits

### Spring 2nd Year

- AGRY 33800 - Environmental Field Skills or
- NRES 33800 - Environmental Field Skills
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II
- Sustainability Science Concentration Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

- Elective - Credit Hours: 3.00-4.00

## 14-15 Credits

### Fall 3rd Year

- NRES 42000 - Environmental Internship Reporting
- CE 35500 - Engineering Environmental Sustainability ♦ or
- EEE 35500 - Engineering Environmental Sustainability ♦
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry ♦
- **Microeconomics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- Data Science Selective: Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16-17 Credits

### Spring 3rd Year

- FNR 21000 - Natural Resource Information Management
- BIOL 28600 - Introduction To Ecology And Evolution
- EEE 43000 - Industrial Ecology And Life Cycle Analysis
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology
- Sustainability Science Concentration Selective - Credit Hours: 3.00

## 17 Credits

### Fall 4th Year

- AGECE 40600 - Natural Resource And Environmental Economics ♦
- **Science Communication Selective** - Credit Hours: 3.00
- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication
- Sustainability Science Concentration Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 12 Credits

### Spring 4th Year

- NRES 49700 - Current Topics In Environmental Sciences
- SFS 30200 - Principles Of Sustainability
- Sustainability Science Concentration Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-4.00

## 13-15 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# Natural Resources and Environmental Science: Watershed Management Concentration, BS

## About the Program

Natural Resources and Environmental Science (NRES) is an interdisciplinary program that combines broad environmental knowledge and technical competency, with understanding of the economic, policy and human factors of environmental management to develop graduates who are well-equipped to deal with the environmental challenges of the 21st century.

Students can choose from one of six concentration areas: energy and climate solutions, environmental policy and analysis, watershed management, environmental quality and restoration, sustainability science or emerging environmental challenges. NRES graduates work in an exciting variety of environmentally related careers in the public and private sector, including state and federal agencies, consulting firms and non-profits.

Students in the Watershed Management Concentration choose 21 credit hours of course work in community involvement, hydrology, and soil conservation in order to engage and educate stakeholders to implement land use and water management practices to protect and improve water quality and natural resources.

Natural Resources and Environmental Science Website

Natural Resources and Environmental Science Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (35 credits)

### Required Major Courses (11 credits)

- AGRY 12500 - Environmental Science And Conservation or
- EAPS 12500 - Environmental Science And Conservation or
- FNR 12500 - Environmental Science And Conservation or
- NRES 12500 - Environmental Science And Conservation (satisfies Science, Technology & Society Selective for core)
- NRES 20000 - Introduction To Environmental Careers
- AGRY 33800 - Environmental Field Skills or
- NRES 33800 - Environmental Field Skills
- NRES 25500 - Soil Science ♦ or
- AGRY 27000 - Forest Soils ♦
- NRES 42000 - Environmental Internship Reporting (Capstone)
- NRES 49700 - Current Topics In Environmental Sciences (Capstone)

## Watershed Management Concentration Courses (24 credits)

### Required Concentration Courses (12 credits)

- AGRY 33700 - Environmental Hydrology ♦ or
- NRES 33700 - Environmental Hydrology
- AGRY 45000 - Soil Conservation and Water Management ♦
- FNR 27000 - Landscape-Level Planning ♦
- NRES 57200 - Stakeholder Involvement In Landscape Management or
- HORT 57200 - Stakeholder Involvement In Landscape Management
- Additional Mathematics or Statistics Selective - Credit Hours: 3.00

### Watershed Management Selective (12 credits)

- Watershed Management Selective - Credit Hours: 12.00

## Other Departmental/Program Course Requirements (69-75 credits)

- AGEC 40600 - Natural Resource And Environmental Economics ♦
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- BIOL 28600 - Introduction To Ecology And Evolution ♦
- FNR 21000 - Natural Resource Information Management
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core) or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 11600 - General Chemistry
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry ♦
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology ♦
- **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Culture Behavioral/Social Science for core)
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Oral Communication Selective ♦** - Credit Hours: 3.00 (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- **Science Communication Selective** - Credit Hours: 3.00
- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication
- **Written Communication Selective ♦** - Credit Hours: 3.00-4.00(satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Broadening Science Selective - Credit Hours:1.00-3.00
- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Sciences Selective - Credit Hours: 3.00

- Humanities or Social Sciences Selective (30000+ level) - Credit Hours: 3.00
- Social Science Selective - Credit Hours: 3.00 (any AGECE, ANTH, ECON, EDPS, POL, PSY, SOC course from the AG HUM/SOCIAL SCI list)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (10-16 credits)

- Electives - Credit Hours: 10.00-16.00

## Supplemental List

- Natural Resources and Environmental Science Supplemental Information

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year



- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12200 - Introduction To Natural Resources And Environmental Science Academic Programs
- CHM 11100 - General Chemistry ♦ or
- CHM 11500 - General Chemistry
- MA 16010 - Applied Calculus I
- NRES 12500 - Environmental Science And Conservation  
**Oral Communication Selective ♦** - Credit Hours: 3.00
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- Elective - Credit Hours: 3.00-4.00

## 16-18 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦ or
- CHM 11600 - General Chemistry  
**Written Communication Selective ♦** - Credit Hours: 3.00-4.00
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- Additional Mathematics or Statistic Selective - Credit Hours: 3.00
- Social Science Selective - Credit Hours: 3.00 (any AGECE, ANTH, ECON, EDPS, POL, PSY, SOC course from the AG HUM/SOCIAL SCI list)
- Elective - Credit Hours: 2.00-4.00

## 14-18 Credits

### Fall 2nd Year

- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BTNY 12000 - Principles Of Plant Biology I ♦
- NRES 20000 - Introduction To Environmental Careers
- NRES 25500 - Soil Science ♦ or
- AGRY 27000 - Forest Soils ♦
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- STAT 30100 - Elementary Statistical Methods
- Broadening Selective - Credit Hours: 1.00-3.00

## 15-17 Credits

### Spring 2nd Year

- AGRY 33800 - Environmental Field Skills or

- NRES 33800 - Environmental Field Skills
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 12100 - Principles Of Plant Biology II ♦
- Watershed Management Concentration Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00-4.00

## 14-15 Credits

### Fall 3rd Year

- AGRY 45000 - Soil Conservation and Water Management ♦
- NRES 42000 - Environmental Internship Reporting
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ or
- CHM 25700 - Organic Chemistry ♦  
**Microeconomics Selective** - Credit Hours: 3.00
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- ECON 25100 - Microeconomics
- Data Science Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16-17 Credits

### Spring 3rd Year

- AGRY 33700 - Environmental Hydrology
- BIOL 28600 - Introduction To Ecology And Evolution
- FNR 21000 - Natural Resource Information Management
- FNR 37500 - Human Dimensions of Natural Resource Management ♦ or
- SOC 34400 - Environmental Sociology ♦
- Watershed Management Concentration Selective - Credit Hours: 3.00

## 14 Credits

### Fall 4th Year

- AGECE 40600 - Natural Resource And Environmental Economics ♦
- NRES 57200 - Stakeholder Involvement In Landscape Management
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00
- **Science Communication Selective** - Credit Hours: 3.00
- ASEC 58500 - Science Communication
- ENGL 42000 - Business Writing

- ENGL 42100 - Technical Writing
- ENTM 20100 - Scientific And Technical Communication

## 12 Credits

### Spring 4th Year

- FNR 27000 - Landscape-Level Planning ♦
- NRES 49700 - Current Topics In Environmental Sciences
- Watershed Management Concentration Selective - Credit Hours: 3.00
- Watershed Management Concentration Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-4.00

## 14-16 Credits

### Pre-Requisite Information

For pre-requisite information, [click here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

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### Certificate

# Deans Scholar Certificate

## Requirements for the Certificate

- AGR 20500 - Dean's Scholars Seminar
- Honors Coursework - (12 credit hours) Honors Courses
- Undergraduate research (thesis) or Scholarly Project - engagement in a sustained project or creative project leading to new knowledge

## Selection Criteria

- All students who enter Purdue University College of Agriculture as recipients of the Board of Trustees Scholarship are encouraged to apply to the Dean's Scholars Program as are others fulfilling the following criteria:
  - 3.8/4.0 High School GPA and 1800 SAT/ACT 27 and above **OR** Valedictorian of high school
- First semester students will be asked to accept a Dean's Scholar status by May 15 and must accept the invitation prior to fall semester.
- Second semester freshmen, sophomores, and transfer students with 60 credits remaining at Purdue may apply if they have a GPA equal to or greater than 3.5. A written essay stating why the student is interested in being a Dean's Scholar is part of the formal application process. Review of applications will be administered by the Office of Academic Programs and the Departmental Honors Coordinator from the department in which the student is enrolled. Prospective Students Information

## Notes

- For more information, please visit the Dean's Scholars Website
- Undergraduate Research: UG Research Website AND UG Honors Research Website
- Scholarly (Creative) Projects
- Scholarly/creative project definitions (not proposal/completion process information unless also completing project for Honors College)
- GPA requirement to earn Dean's Scholars distinction at graduation is 3.25 or above.

## Prerequisite Information

For current pre-requisites for courses, [click here](#).

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# Leadership Development Program Certificate

## About the Program

Everyone has leadership potential. Let LDCP help you tap yours!

In LDCP you will gain leadership experience tailored to you and your situation, enjoy one-on-one coaching, and develop the "soft skills" employers today are looking for. And when you complete LDCP and earn your certificate, it will appear on your academic transcript.

### You are eligible for LDCP if you:

- Are enrolled as an undergraduate in the Purdue College of Agriculture
- Have at least three semesters remaining on campus before graduation
- Remain in good academic standing

Leadership Development Certificate Program

## Program's Philosophy

The following philosophy about leadership was adopted by the College of Agriculture faculty on August 25, 2005. These beliefs serve as the foundation for the Leadership Development Certificate Program.

We believe that all students can and should exercise leadership. Leadership does not require formal authority or position and can be practiced by anyone interested in making a difference in his/her family, workplace, and community.

Leadership is a process of people working together toward common goals that bring about positive change. The effectiveness of leadership is based on trusting relationships. Through this exchange, people influence one another's thoughts and actions. By incorporating the diverse skills and viewpoints of others, individuals are empowered and group energy is mobilized to pursue collective goals. Decisions are made and actions are taken.

The development of leadership begins with personal initiative and an understanding of one's passions, motivations, strengths, limitations, and personal values. This also includes an understanding of the ethical nature of leadership as it relates to one's character and a commitment to act with trustworthiness, respect, responsibility, fairness, caring, and citizenship.

This process of self-discovery is ongoing and requires a commitment to lifelong learning through getting involved, reflecting on the experience, and stretching oneself to meet new challenges. The purpose of leadership development is not only for the benefit of oneself, but also to enable one to be a more effective leader in addressing important issues that affect oneself and others.

## Leadership Competencies

The Leadership Development Certificate Program includes four general areas of leadership development and 13 specific skill areas. The faculty expects you to develop at least one skill in each of the four areas during this program.

- Personal leadership development
  - Understands leadership
  - Increases self-awareness
  - Practices ethical behavior
  - Sustains leadership over time

- Interpersonal leadership development
  - Values diversity
  - Enhances communication skills
  - Manages conflict
- Group and organizational leadership development
  - Develops teams
  - Leads change
  - Manages projects
- Community leadership development
  - Practices citizenship
  - Understands community
  - Serves others

## Coaches

After you submit a Statement of Intent and a resume, you will be matched with a faculty or administrative professional staff member to guide and support you on your leadership journey. S/he will help you identify your leadership goals, connect you with campus resources, and encourage you to stretch yourself beyond your comfort zone by seeking out new leadership opportunities. The program, however, is yours, and the quality of your learning experiences is up to you.

## Requirements for the Certificate

1. Submit your Statement of Intent along with your résumé. Application/Statement of Intent
2. Contact the coach who has been assigned to you.
3. Complete the Leadership Skills and Attributes Self-Assessment.
4. Complete a Personal Development Plan for how you will enhance your leadership development in each of the following leadership pillars (personal, interpersonal, group/organization, and community leadership development).
5. Complete required badges for all four leadership development pillars (5 points required for each pillar) for a minimum of 20 points total via Passport to complete the program. Each leadership activity is eligible for one, two or three points and is achieved when the coach approves the required written reflections submitted by the students via Passport. Badges for each of the four leadership pillars are achieved when written reflections are approved by coaches via Passport.
  - a. Earn five points for Personal Leadership
  - b. Earn five points for Interpersonal Leadership
  - c. Earn five points for Group/Organizational Leadership
  - d. Earn five points for Community Leadership
6. Develop an electronic portfolio via Passport that documents your progress on your goals including your personal reflections for each leadership activity and badge completion for the program.

## Pre-Requisite Information

For pre-requisite information, click [here](#).

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## Minor

### Data Driven Agriculture Minor

#### About the Program

The data revolution in agriculture is enabled by advances in sensing, communication, and computation technologies and spurred by demand for improved sustainability and transparency in areas such as natural resources use and food safety. Cheaper and more portable sensors generate measurements at previously unimagined spatial and temporal resolutions. As these new data products are becoming available, other data such as publicly available soil, topography, and weather information is also flowing more readily via improved connections. Agricultural professionals will be increasingly using these data in both research and in production, processing, and marketing. With increased intensity, volume, and applications, industry is expecting programming and data skills. The Purdue Data Driven Agriculture minor builds these proficiencies and efficiently packages content related to the data pipeline and data science analytics with a culmination in data-driven decision making. The minor includes courses that map to these skill sets:

- A foundation in mathematics and statistics
- Data acquisition and sensors
- Data literacy, ethics, management, and analytics
- Knowledge of how data is used in agricultural disciplines
- Data architecture and usage, including geographic information systems (GIS)
- Data-driven decision making

#### Requirements for the Minor (21 credits)

##### Required Course (3 credits)

- AGR 33300 - Data Science For Agriculture

##### Foundation in Computation - Choose One (3 credits)

- ABE 20500 - Computations For Engineering Systems \*
- ABE 30100 - Numerical And Computational Modeling In Biological Engineering \*
- ASM 10500 - Computing Technology With Applications \*
- CNIT 10500 - Introduction To C Programming
- CNIT 13600 - Personal Computing Technology And Applications
- CNIT 17600 - Information Technology Architectures
- CS 10100 - Digital Literacy

- CS 15900 - C Programming
- CS 17700 - Programming With Multimedia Objects
- CS 18000 - Problem Solving And Object-Oriented Programming
- CS 23500 - Introduction To Organizational Computing
- ECE 26400 - Advanced C Programming
- ECE 36800 - Data Structures
- ECE 46900 - Operating Systems Engineering
- IE 33200 - Computing In Industrial Engineering
- MGMT 28800 - Programming For Business Applications

### Foundation in Data Literacy, Management and Analytics - Choose One (3 credits)

- BCHM 42100 - R For Molecular Biosciences \*
- CNIT 48800 - Data Warehousing
- CNIT 57000 - IT Data Analytics
- CS 24200 - Introduction To Data Science
- CS 25100 - Data Structures And Algorithms
- ECE 29595 - Selected Topics In Electrical And Computer Engineering
- ECE 30010 - Introduction To Machine Learning And Pattern Recognition
- ECE 47300 - Introduction To Artificial Intelligence
- ENTM 24200 - Data Science \*
- ILS 59500 - Special Topics In Information And Data Science
- MGMT 38200 - Management Information Systems
- MGMT 54400 - Database Management Systems
- PHIL 20700 - Ethics For Technology, Engineering, And Design
- SCLA 59000 - Special Topics
- STAT 24200 - Introduction To Data Science
- TDM 10100 - The Data Mine Seminar I
- TDM 10200 - The Data Mine Seminar II
- TDM 20100 - The Data Mine Seminar III
- TDM 20200 - The Data Mine Seminar IV
- TDM 30100 - The Data Mine Seminar V
- TDM 30200 - The Data Mine Seminar VI
- TDM 40100 - The Data Mine Seminar VII
- TDM 40200 - The Data Mine Seminar VIII

### Foundation in Statistical Methods - Choose One (3 credits)

- AAE 36100 - Introduction To Random Variables In Engineering
- BIOL 39500 - Special Assignments
- BIOL 58210 - Ecological Statistics
- BIOL 59500 - Special Assignments
- CHE 32000 - Statistical Modeling And Quality Enhancement
- EAPS 31000 - Introductory Statistics For Geosciences
- ECE 20875 - Python For Data Science
- ECE 30200 - Probabilistic Methods In Electrical And Computer Engineering



- ECON 36000 - Econometrics
- EDPS 55600 - Introduction To Quantitative Data Analysis Methods In Education I
- EDPS 55700 - Introduction To Quantitative Data Analysis Methods In Education II
- IDE 36000 - Multidisciplinary Engineering Statistics
- IE 33000 - Probability And Statistics In Engineering II
- MGMT 30500 - Business Statistics
- MGMT 30600 - Management Science
- PSY 20100 - Introduction To Statistics In Psychology
- STAT 22500 - Introduction To Probability Models
- STAT 30100 - Elementary Statistical Methods
- STAT 35000 - Introduction To Statistics
- STAT 35500 - Statistics For Data Science
- STAT 50100 - Experimental Statistics I
- STAT 50300 - Statistical Methods For Biology
- STAT 51100 - Statistical Methods

### Data Acquisition - Choose One: (3 credits)

- ABE 31400 - Design Of Electronic Systems \*
- ABE 46000 - Sensors And Process Control \*
- ABE 53100 - Instrumentation And Data Acquisition \*
- AGRY 54500 - Remote Sensing Of Land Resources \*
- ASM 42000 - Electric Power And Controls \*
- ECE 57700 - Engineering Aspects Of Remote Sensing
- ECET 35901 - Computer Based Data Acquisition Applications
- EDPS 53100 - Introduction To Measurement And Instrument Design
- FNR 35700 - Fundamental Remote Sensing \*
- ME 36500 - Measurement And Control Systems I

### Data Architecture and Usage - Choose One: (3 credits)

- ABE 20500 - Computations For Engineering Systems \*
- ABE 30100 - Numerical And Computational Modeling In Biological Engineering \*
- AGECE 20201 - Introduction To Data Analytics For Agricultural Business \*
- AGECE 45100 - Applied Econometrics \*
- ASM 54000 - Geographic Information System Application \*
- BCHM 42200 - Computational Genomics \*
- BCHM 52100 - Comparative Genomics \*
- CNIT 37200 - Database Programming
- CNIT 39200 - Enterprise Data Management
- FNR 55800 - Remote Sensing Analysis And Applications \*
- MGMT 40300 - Database Management Systems
- MGMT 47300 - Data Mining
- FNR 35910 - Spatial Ecology \* and
- FNR 35950 - Spatial Ecology Laboratory \*

### Data to Decisions\* - Choose One: (3 credits)

- ABE 52700 - Computer Models In Environmental And Natural Resources Engineering
- AGECE 30500 - Agricultural Prices
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 45100 - Applied Econometrics
- AGECE 50600 - Agricultural Marketing And Price Analysis
- AGECE 51600 - Mathematical Tools For Agricultural And Applied Economics
- ASECE 58200 - Introduction To The Application Of Inferential Statistics
- AGRY 44400 - Weather Analysis And Forecasting
- AGRY 48500 - Precision Crop Management
- ANSC 31100 - Animal Breeding And Genetics
- ASM 42200 - Advanced Machine Technology For Agricultural Crop Production
- ASM 53000 - Power And Machinery Management
- AGECE 55200 - Introduction To Mathematical Programming
- BCHM 42100 - R For Molecular Biosciences
- BCHM 52100 - Comparative Genomics
- BTNY 53500 - Plant Disease Epidemiology
- ENTM 22820 - Forensic Analysis
- ENTM 30100 - Experimentation And Analysis
- FNR 35500 - Quantitative Methods For Resource Management
- FNR 55800 - Remote Sensing Analysis And Applications
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 53100 - Applied Plant Genomics

## Notes

- \*Agriculture Courses - At least 9 credits applied to the minor must come from the College of Agriculture
- Courses appearing in more than one category may only be used once toward the minor.
- Many courses have prerequisites and capacity limits; while these provide some constraints, there are paths for students from any major to obtain this minor.

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## Pre-Requisite Information

For pre-requisite information, click here.

## **International Studies in Agriculture Minor**

### About the Program

The Purdue University College of Agriculture offers an International Studies in Agriculture minor to all Purdue undergraduate students who wish to develop international competencies beyond the minimum international understanding course requirements. The International Studies of Agriculture minor is an academic minor administered by the Purdue College of Agriculture Office of Academic Programs (OAP), in partnership with International Programs in Agriculture (IPIA).

Goals for the minor include:

1. Increase the student's understanding of international agriculture (including, but not limited to food, water, energy, economics, environment, natural resources, health, plants, animals, forestry, and wildlife);
2. Prepare students for international facets of their careers and lives through experiences on and off campus;
3. Integrate the development of cultural awareness into all on-campus, co-curricular, and study abroad student experiences; and
4. Increase the relevance and attraction of students seeking this minor.

This minor directly addresses the College of Agriculture Strategic Plan (2021-2026)

*We are 'global' in our identity.*

- *Teaching: Prepare students for tomorrow's world with breadth and depth*
- *Engagement: Focused international engagement with partnerships*
- *Research: Global recognition for driving discovery towards solutions to challenges*

Learning Outcomes

Students who complete the International Studies in Agriculture Minor will be able to:

1. demonstrate critical thinking and analytical skills through successful completion of a project with an international dimension in agriculture
2. demonstrate effective cross-cultural international communication, both orally and in written form, about an international topic
3. demonstrate the ability to be a global citizen in international and multicultural, locations and groups
4. understand the global importance and impact of agriculture
5. communicate an appreciation of and respect for cultural diversity, and being able to think critically about the impact that their own cultural identities have on their worldview

## Requirements for the Minor (15-27 credits)

### Requirements - Complete Five (5) Learning Outcomes:

Learning outcomes are not all credit based. All five learning outcomes must be met to complete the minor.

### Learning Outcome 1 - Projects

#### Option 1: Research Project

- Completion of undergraduate research project with an integrated international component, where the international dimension is critical to successfully completing the project, and the project is related to agriculture.

## Option 2: Capstone Project

- Completion of a capstone project with an integrated international component, where the international dimension is critical to successfully completing the project, and the project is related to agriculture.

## Option 3: International Agriculture Project

- Completion of a project, related to agriculture and with an international partner, either for-credit or extracurricular, where the project has a faculty advisor, defined scope and objectives, and demonstrable outcomes. Examples include, but are not limited to, Purdue international service-learning projects, EPICS international projects, Purdue Utility Project (PUP), Purdue Youthmappers, and internships that meet the requirements. OAP and IPIA will assist students in finding suitable projects, and with evaluating projects proposed directly by students.

## Learning Outcome 2 - World Language

### Option 1 - World Language Aptitude

#### Option 1a - World Language Advanced Coursework (12 credits)

- Coursework through the 4th semester, or 12 credits, of a second language

#### Option 1b - Study Abroad Course taught in Foreign Language

- Successful completion of at least one class taught in a foreign language during a semester abroad.

#### Option 1c - World Language Proficiency Exam

- Successful completion of a recognized language proficiency exam, external to Purdue.

### Option 2 - Intercultural Development Inventory (IDI)

- Completion of Intercultural Development Inventory (IDI), a debrief with a Qualified Administrator, completion of an Intercultural Development Plan (IDP), and a second IDI and debrief following completion of at least one other learning outcome. (Other intercultural assessment tools may be considered if they can demonstrate achievement of the learning outcome and are validated, reliable, and include a written and oral component (i.e. the debrief and development plan for the IDI).

## Learning Outcome 3 - International Engagement

### Option 1 - Study Abroad Experience

- Study abroad experience (minimum of 8 weeks of international experience, can be the sum of multiple experiences)

### Option 2 - Campus Engagement with International Group

- Engagement with an international group on campus that leads to demonstrable and intentional development of the desire to, and recognition of the importance of being a global citizen. Students wishing to utilize this assessment are required to submit a written summary describing their understanding of what it means to be a global citizen and what impact their interactions with the international group had on their development in this area.

### Learning Outcome 4 - International Agriculture Courses (15 credits)

- Completion of 15 semester credits of courses related to international agriculture. Courses offered by the College of Agriculture that meet the International Understanding requirement, and courses relating to agriculture and taken at the host university during a study abroad satisfy this requirement.

### Learning Outcome 5 - Reflective Paper/Video

- A reflective summary paper or recorded video illustrating an appreciation of and respect for cultural diversity, and how their own cultural identities impact their worldview of food and agriculture. Recommended to be completed their final semester and integrating the assessments from previous learning outcomes.

### Course Examples:

#### Examples of College of Agriculture International-related Courses

- AGEC 25000 - Economic Geography Of World Food And Resources
- AGEC 34000 - International Economic Development
- AGEC 40000 - Agricultural Economics Study Abroad
- AGEC 45000 - International Agricultural Trade
- AGEC 49800 - Special Problems - *Title: Afghanistan Development Challenges*
- AGEC 52600 - International Food And Agribusiness Marketing Strategy
- AGEC 59600 - Seminars In Current Issues In Agricultural Economics
- AGR 40000 - Agriculture Study Abroad
- AGR 49300 - Special Topics In International Agriculture
- AGR 49500 - International Professional Experience In Agriculture, Food, Or Natural Resources
- AGRY 28500 - World Crop Adaptation And Distribution
- AGRY 35000 - Global Awareness
- AGRY 39900 - Individual Study - *Title: Afghanistan Development Challenges*
- AGRY 40000 - Agronomy Study Abroad
- AGRY 59800 - Special Problems *Titles: Global Food Problems or African Development Challenges*
- ANSC 29400 - Exploring International Animal Agriculture
- ANSC 29500 - Special Topics In Animal Sciences
- ANSC 33100 - The Role Of Horses In Human History, Culture, And Society
- ANSC 40000 - Animal Sciences Study Abroad
- ASEC 43100 - Planning For International Engagement Methods
- ASEC 43120 - Evaluating International Engagement Methods
- ASEC 55100 - International Engagement And Development Strategies
- ASM 40000 - Agricultural Systems Management Study Abroad
- BCHM 40000 - Biochemistry Study Abroad
- BTNY 28500 - Plants And Civilization

- BTNY 39000 - Selected Topics In Plant Science
- BTNY 40000 - Botany And Plant Pathology Study Abroad
- ENTM 40000 - Entomology Study Abroad
- FNR 23000 - The World's Forests And Society
- FNR 30200 - Global Sustainability Issues
- FNR 40000 - Forestry And Natural Resources Study Abroad
- FNR 46000 - International Natural Resources Summer Program
- FS 40000 - Food Science Study Abroad
- FS 47000 - Wine Appreciation
- HORT 40000 - Horticulture Study Abroad
- HORT 40300 - Tropical Horticulture
- HORT 45000 - In The English Landscape: Integrating History, Horticulture, And Landscape Architecture
- LA 16600 - History And Theory Of Landscape Architecture
- LA 40000 - Landscape Architecture Study Abroad
- LA 45000 - In The English Landscape: Integrating History, Horticulture, and Landscape Architecture
- NRES 40000 - Natural Resources And Environmental Science Study Abroad

### Examples of courses from outside of the College of Agriculture

- ECON 37000 - International Trade
- POL 13000 - Introduction To International Relations

### Notes

- Credits earned via a Purdue approved Study Abroad Program can be used as long as they fulfill the basic requirements listed above. Namely, focus on the country/region, etc.
- Departmental permission is required to enroll in this minor. Please contact Tim Kerr in Room 121 of the Agricultural Administration Building.
- Students must have their Plan of Study approved a minimum of six months prior to graduation. Final approval will require approval of the stated deliverables by the College of Agriculture Office of Academic Programs three weeks before the end of the graduating semester.

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### Pre-Requisite Information

For pre-requisite information, click here.

## Natural Resources and Environmental Science Minor

## Requirements for the Minor (15 credits)

### Required Course (3 credits)

- NRES 12500 - Environmental Science And Conservation

### Selective Course - Choose One: (3 credits)

- AGEC 40600 - Natural Resource And Environmental Economics
- FNR 37500 - Human Dimensions of Natural Resource Management
- NRES 25500 - Soil Science
- POL 22300 - Introduction To Environmental Policy
- SOC 34400 - Environmental Sociology

### Emphasis Areas Selectives (9 credits)

Select one course from three different areas.

#### Climate and Energy Emphasis

- NRES 23000 - Survey Of Meteorology
- POL 32700 - Global Green Politics

#### Environmental Policy and Analysis Emphasis

- AGEC 52500 - Environmental Policy Analysis
- ASEC 58500 - Science Communication
- POL 32700 - Global Green Politics

#### Environmental Quality and Restoration Emphasis

- AGRY 56000 - Soil Physics
- BTNY 30500 - Plant Evolution And Taxonomy

#### Sustainability Science Emphasis

- EEE 35500 - Engineering Environmental Sustainability
- EEE 43000 - Industrial Ecology And Life Cycle Analysis
- SFS 30200 - Principles Of Sustainability

#### Watershed Management Emphasis

- AGRY 33700 - Environmental Hydrology
- AGRY 45000 - Soil Conservation and Water Management
- FNR 27000 - Landscape-Level Planning and

- HORT 59000 - Special Studies In Horticulture

## Note

- Department permission is not required to enroll in this minor.

## Pre-Requisite Information

For pre-requisite information, click [here](#).

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## Pre-Program

### **Plant Studies - Exploratory (Pre)**

## About the Program

This pre-major is intended to serve as an optional entry point/portal for students interested in life sciences and enrolling in the Purdue College of Agriculture with an interest in plants but who are uncertain about the differences between all the majors and career options. As a Plant Studies - Exploratory major, students will make progress toward their Bachelor of Science degree and engage the numerous experiential learning opportunities (e.g. learning communities, clubs, leadership opportunities, Study Abroad, etc.) offered in the College. Students will have up to 4-semesters or 60 total credits to explore the various majors before selecting one that best meets their educational and career interests. It is anticipated that most students will likely select a major by the end of their first two semesters.

Plant Studies-Exploratory Major Change (CODO) Requirements

## Degree Requirements

### **31.5-34.5 credits Required**

#### Departmental/Program Major Courses (2.5 credits)

#### Required Major Courses (2.5 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12500 - Introduction To Plant Science



- AGR 29000 - Special Topics In Agriculture (Study Plants at Purdue Learning Community) - Credit Hours: 1.00

## Other Departmental/Program Course Requirements (26-31 credits)

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- MA 16010 - Applied Calculus I
- BIOL 11000 - Fundamentals Of Biology I or
- BTNY 11000 - Introduction To Plant Science
- CHM 11100 - General Chemistry or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry
- MA 16020 - Applied Calculus II or
- STAT 30100 - Elementary Statistical Methods
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- **Selective Exploratory Plant Science** - Credit Hours: 1.00-3.00
- AGRY 10500 - Crop Production
- AGRY 12300 - Genetics And Society
- AGRY 28500 - World Crop Adaptation And Distribution
- BTNY 20700 - The Microbial World
- BTNY 28500 - Plants And Civilization
- FNR 23000 - The World's Forests And Society
- HORT 10100 - Fundamentals Of Horticulture
- HORT 12100 - Medicine In The Garden
- LA 16100 - Land And Society
- LA 16600 - History And Theory Of Landscape Architecture
- SFS 31200 - Urban Agriculture

## Electives (1-3 credits)

- Electives - Credit Hours: 1.00-3.00

## Program Requirements

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12500 - Introduction To Plant Science
- AGR 29000 - Special Topics In Agriculture (Study Plants at Purdue Learning Community) - Credit Hours: 1.00
- MA 16010 - Applied Calculus I
- BIOL 11000 - Fundamentals Of Biology I or
- BTNY 11000 - Introduction To Plant Science
- CHM 11100 - General Chemistry or

- CHM 11500 - General Chemistry
- Written Communication Selective - Credit Hours: 3.00-4.00

## 15.5-17.5 Credits

### Spring 1st Year

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry
- MA 16020 - Applied Calculus II or
- STAT 30100 - Elementary Statistical Methods
- Selective Exploratory Plant Science - Credit Hours: 1.00-3.00
- Oral Communication Selective - Credit Hours: 3.00
- Elective - Credit Hours 1.00-3.00

## 14-19 Credits

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

### Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Pre-Veterinary Medicine

### About the Program

Pre-veterinary medicine is not really a major, but rather is a collection of prerequisites for admission to Purdue's College of Veterinary Medicine. Students may enter the College of Agriculture in this category, but later must pick a major to pursue. Students pursuing a wide variety of curricula may apply and be admitted to a veterinary college.

The pre-veterinary medicine curriculum includes courses that are required for admission to the Doctor of Veterinary Medicine degree program offered by the Purdue College of Veterinary Medicine. This program of study, coordinated by the College of Agriculture Office of Academic Programs, emphasizes the biological and physical sciences that are

foundations for successful study of veterinary medicine. Also, the curriculum includes courses in communication and the social sciences.

## **OAP • Pre-Professional**

Pre-Veterinary Medicine Major Change (CODO) Requirements

### Degree Requirements

## **92 Credits Required**

### Departmental/Program Major Courses (18 credits)

#### Required Major Courses (9 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12400 - Introduction To College Of Agriculture Pre-Veterinary Medicine Academic Programs
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- ANSC 22100 - Principles Of Animal Nutrition
- VM 10200 - Careers In Veterinary Medicine

#### Agricultural Selectives (9 credits)

- ABE 10000:59999
- AGE 10000:59999
- AGR 10000:59999
- AGRY 10000:59999
- ANSC 10000:59999
- ASEC 10000:59999
- ASM 10000:59999
- BCHM 10000:59999
- BTNY 10000:59999
- ENTM 10000:59999
- FNR 10000:59999
- FS 10000:59999
- HORT 10000:59999
- LA 10000:59999
- NRES 10000:59999
- SFS 10000:59999

### Other Departmental/Program Course Requirements (68-69 credits)

- BCHM 30700 - Biochemistry

- BIOL 11000 - Fundamentals Of Biology I (satisfies Science #1 for core)
- BIOL 11100 - Fundamentals Of Biology II (satisfies Science #2 for core)
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- **Oral Communication Selective** - Credit Hours: 3.00 (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- **Written Communication Selective** - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology, & Society Selective - Credit Hours: 3.00 (satisfies Science, Technology, & Society for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (5-6 credits)

- Elective - Credit Hours: 5.00-6.00

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00

- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or

- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample Plan of Study

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12400 - Introduction To College Of Agriculture Pre-Veterinary Medicine Academic Programs
- BIOL 11000 - Fundamentals Of Biology I
- CHM 11500 - General Chemistry
- MA 16010 - Applied Calculus I
- **Written Communication Selective** - Credit Hours: 3.00-4.00
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity

### 15-16 Credits

### Spring 1st Year

- BIOL 11100 - Fundamentals Of Biology II
- CHM 11600 - General Chemistry
- VM 10200 - Careers In Veterinary Medicine
- **Oral Communication Selective** - Credit Hours: 3.00
- COM 11400 - Fundamentals Of Speech Communication or
- COM 21700 - Science Writing And Presentation or
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- **Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics

## 15 Credits

### Fall 2nd Year

- ANSC 22100 - Principles Of Animal Nutrition
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- Science, Technology, & Society Selective - Credit Hours: 3.00

## 15 Credits

### Spring 2nd Year

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Agricultural Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 17 Credits

### Fall 3rd Year

- BCHM 30700 - Biochemistry
- PHYS 22000 - General Physics
- STAT 30100 - Elementary Statistical Methods
- Agricultural Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 15-16 Credits

### Spring 3rd Year

- BIOL 22100 - Introduction To Microbiology
- PHYS 22100 - General Physics
- Agricultural Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 14 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

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## Program Information

### College of Agriculture Additional Written or Oral Communication Selectives

#### Written or Oral Communication Selectives

- ASL 10000:59999 (ASL 10000 level courses are accepted)
- COM 20000:59999
- ENGL 20000:59999
- AGR 20100 - Communicating Across Culture
- ASEC 28500 - Introduction To Publication Design
- ASEC 44000 - Methods Of Teaching Agricultural Education
- ASEC 48500 - Environmental Communication
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- ENTM 20100 - Scientific And Technical Communication
- NRES 48500 - Environmental Communications
- SFS 48500 - Environmental Communication



# College of Agriculture Humanities or Social Science Selectives

Use Any Selective Area to fulfill this requirement

## Agriculture Humanities or Social Sciences Selective

- AAS 10000-59999 - African American Studies
- AD 10000-59999 - Art and Design
- AMST 10000-59999 - American Studies
- ANTH 10000-59999 - Anthropology
- ARAB 10000-59999 - Arabic
- ASAM - 10000-59999 - Asian American Studies
- ASL - 10000-59999 - American Sign Language
- BAND 10000-59999 - Bands (Maximum of 3 credits can be used for Humanities)
- CHNS 10000-59999 - Chinese
- CLCS 10000-59999 - Classics
- CMPL 10000-59999 - Comparative Literature
- DANC 10000-59999 - Dance
- ECON 10000-59999 - Economics
- FR 10000-59999 - French
- FVS 10000-59999 - Film and Video Studies
- GER 10000-59999 - German
- GREK 10000-59999 - Greek
- HEBR 10000-59999 - Hebrew
- HIST 10000-59999 - History
- IDIS 10000-59999 - Interdisciplinary Studies
- ITAL 10000-59999 - Italian
- JPNS 10000-59999 - Japanese
- JWST 10000-59999 - Jewish Studies
- KOR 10000:59999 - Korean
- LALS 10000-59999 - Latin American and Latino Studies
- LATN 10000-59999 - Latin
- LC 10000-59999 - Languages and Cultures
- LING 10000-59999 - Linguistics
- MARS 10000-59999 - Medieval and Renaissance Studies
- MUS 10000-59999 - Music
- PHIL 10000-59999 - Philosophy
- POL 10000-59999 - Political Science
- PSY 10000-59999 - Psychological Sciences
- PTGS 10000-59999 - Portuguese
- REL 10000-59999 - Religious Studies
- RUSS 10000-59999 - Russian
- SOC 10000-59999 - Sociology
- SPAN 10000-59999 - Spanish
- THTR 10000-59999 - Theatre
- WGSS 10000-59999 - Women's, Gender, And Sexuality Studies

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy
- AGEC 21700 - Economics
- AGEC 25000 - Economic Geography Of World Food And Resources
- AGEC 30500 - Agricultural Prices
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 34000 - International Economic Development
- AGEC 40600 - Natural Resource And Environmental Economics
- AGEC 41000 - Agricultural Policy
- AGEC 45000 - International Agricultural Trade
- AGR 20100 - Communicating Across Culture
- AGRY 12300 - Genetics And Society
- ANSC 33100 - The Role Of Horses In Human History, Culture, And Society
- ASEC 30100 - Building Intercultural Partnerships
- ASEC 33100 - The Role Of Horses In Human History, Culture And Society
- ASEC 35500 - Controversial Science And Media In The Public Sphere
- EDPS 23500 - Learning And Motivation
- EDPS 26500 - The Inclusive Classroom
- ENGL 11000 - American Language And Culture For International Students I
- ENGL 22700 - Elements Of Linguistics
- ENGL 23000 - Great Narrative Works
- ENGL 23100 - Introduction To Literature
- ENGL 23200 - Thematic Studies In Literature
- ENGL 23700 - Introduction To Poetry
- ENGL 23800 - Introduction To Fiction
- ENGL 24000 - British Literature Before 1789
- ENGL 24100 - British Literature After 1789
- ENGL 25000 - Great American Books
- ENGL 25700 - Literature Of Black America
- ENGL 26200 - Greek And Roman Classics In Translation
- ENGL 26400 - The Bible As Literature
- ENGL 26600 - World Literature: From The Beginnings To 1700 A.D.
- ENGL 26700 - World Literature: From 1700 A.D. To The Present
- ENGL 27600 - Shakespeare On Film
- ENGL 27900 - The American Short Story In Print And Film
- ENGL 33100 - Medieval English Literature
- ENGL 35800 - Black Drama
- ENGL 35000 - American Literature Before 1865
- ENGL 35100 - American Literature After 1865
- ENGL 36000 - Gender And Literature
- ENGL 37300 - Science Fiction And Fantasy
- ENGL 37700 - Modern And Contemporary Poetry
- ENGL 37900 - The Short Story
- ENGL 38100 - The British Novel
- ENGL 38200 - The American Novel
- ENGL 38600 - History Of Film To 1950
- ENGL 38700 - History Of Film Since 1950
- ENGL 39600 - Studies In Literature And Language

- ENGL 41100 - Studies In Major Authors
- ENGL 41200 - Studies In Genre
- ENGL 41300 - Studies In Literature And History
- ENGL 41400 - Studies In Literature And Culture
- ENGL 44100 - Chaucer's Canterbury Tales
- ENGL 44200 - Shakespeare
- ENGL 46200 - The Bible As Literature: The Old Testament
- ENGL 46300 - The Bible As Literature: The New Testament
- ENGL 49200 - Literature In The Secondary Schools
- FNR 37500 - Human Dimensions of Natural Resource Management
- HDFS 28000 - Diversity In Individual And Family Life
- HORT 30600 - History Of Horticulture
- HORT 45000 - In The English Landscape: Integrating History, Horticulture, And Landscape Architecture
- LA 45000 - In The English Landscape: Integrating History, Horticulture, and Landscape Architecture
- SLHS 22700 - Elements Of Linguistics

## Agriculture Humanities or Social Sciences Selective (30000-59999)

- AAS 30000-59999 - African American Studies
- AD 30000-59999 - Art and Design
- AMST 30000-59999 - American Studies
- ANTH 30000-59999 - Anthropology
- ARAB 30000-59999 - Arabic
- ASAM 30000-59999 - Asian American Studies
- ASL 30000-59999 - American Sign Language
- BAND 30000-59999 - Bands (Maximum of 3 credits can be used for Humanities)
- CHNS 30000-59999 - Chinese
- CLCS 30000-59999 - Classics
- CMPL 30000-59999 - Comparative Literature
- DANC 30000-59999 - Dance
- ECON 30000-59999 - Economics
- FR 30000-59999 - French
- FVS 30000-59999 - Film and Video Studies
- GER 30000-59999 - German
- GREK 30000-59999 - Greek
- HEBR 30000-59999 - Hebrew
- HIST 30000-59999 - History
- IDIS 30000-59999 - Interdisciplinary Studies
- ITAL 30000-59999 - Italian
- JPNS 30000-59999 - Japanese
- JWST 30000-59999 - Jewish Studies
- KOR 30000-59999 - Korean
- LALS 30000-59999 - Latin America and Latino Studies
- LATN 30000-59999 - Latin
- LC 30000-59999 - Languages and Cultures
- LING 30000-59999 - Linguistics

- MARS 30000-59999 - Medieval and Renaissance Studies
- MUS 30000-59999 - Music
- PHIL 30000-59999 - Philosophy
- POL 30000-59999 - Political Science
- PSY 30000-59999 - Psychological Sciences
- PTGS 30000-59999 - Portuguese
- REL 30000-59999 - Religious Studies
- RUSS 30000-59999 - Russian
- SOC 30000-59999 - Sociology
- SPAN 30000-59999 - Spanish
- THTR 30000-59999 - Theatre
- WGSS 30000-59999 - Women's, Gender, And Sexuality Studies
- AGEC 30500 - Agricultural Prices
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 34000 - International Economic Development
- AGEC 40600 - Natural Resource And Environmental Economics
- AGEC 41000 - Agricultural Policy
- AGEC 45000 - International Agricultural Trade
- ASEC 30100 - Building Intercultural Partnerships
- ASEC 33100 - The Role Of Horses In Human History, Culture And Society
- ASEC 35500 - Controversial Science And Media In The Public Sphere
- ENGL 33100 - Medieval English Literature
- ENGL 35000 - American Literature Before 1865
- ENGL 35100 - American Literature After 1865
- ENGL 35800 - Black Drama
- ENGL 36000 - Gender And Literature
- ENGL 37300 - Science Fiction And Fantasy
- ENGL 37700 - Modern And Contemporary Poetry
- ENGL 37900 - The Short Story
- ENGL 38100 - The British Novel
- ENGL 38200 - The American Novel
- ENGL 38600 - History Of Film To 1950
- ENGL 38700 - History Of Film Since 1950
- ENGL 39600 - Studies In Literature And Language
- ENGL 41100 - Studies In Major Authors
- ENGL 41200 - Studies In Genre
- ENGL 41300 - Studies In Literature And History
- ENGL 41400 - Studies In Literature And Culture
- ENGL 44100 - Chaucer's Canterbury Tales
- ENGL 44200 - Shakespeare
- ENGL 46200 - The Bible As Literature: The Old Testament
- ENGL 46300 - The Bible As Literature: The New Testament
- ENGL 49200 - Literature In The Secondary Schools
- FNR 37500 - Human Dimensions of Natural Resource Management
- HORT 30600 - History Of Horticulture
- HORT 45000 - In The English Landscape: Integrating History, Horticulture, And Landscape Architecture
- LA 45000 - In The English Landscape: Integrating History, Horticulture, and Landscape Architecture

## Human Cultures: Humanities Selectives

University Core Curriculum listing

## Human Cultures: Behavioral/Social Sciences Selectives

University Core Curriculum listing

## **College of Agriculture Humanities or Social Science Selectives (30000+ level)**

Use Any Selective Area to fulfill this requirement

### Agriculture Humanities or Social Sciences Selective

- AAS 10000-59999 - African American Studies
- AD 10000-59999 - Art and Design
- AMST 10000-59999 - American Studies
- ANTH 10000-59999 - Anthropology
- ARAB 10000-59999 - Arabic
- ASAM - 10000-59999 - Asian American Studies
- ASL - 10000-59999 - American Sign Language
- BAND 10000-59999 - Bands (Maximum of 3 credits can be used for Humanities)
- CHNS 10000-59999 - Chinese
- CLCS 10000-59999 - Classics
- CMPL 10000-59999 - Comparative Literature
- DANC 10000-59999 - Dance
- ECON 10000-59999 - Economics
- FR 10000-59999 - French
- FVS 10000-59999 - Film and Video Studies
- GER 10000-59999 - German
- GREK 10000-59999 - Greek
- HEBR 10000-59999 - Hebrew
- HIST 10000-59999 - History
- IDIS 10000-59999 - Interdisciplinary Studies
- ITAL 10000-59999 - Italian
- JPNS 10000-59999 - Japanese
- JWST 10000-59999 - Jewish Studies
- KOR 10000:59999 - Korean
- LALS 10000-59999 - Latin American and Latino Studies
- LATN 10000-59999 - Latin
- LC 10000-59999 - Languages and Cultures

- LING 10000-59999 - Linguistics
- MARS 10000-59999 - Medieval and Renaissance Studies
- MUS 10000-59999 - Music
- PHIL 10000-59999 - Philosophy
- POL 10000-59999 - Political Science
- PSY 10000-59999 - Psychological Sciences
- PTGS 10000-59999 - Portuguese
- REL 10000-59999 - Religious Studies
- RUSS 10000-59999 - Russian
- SOC 10000-59999 - Sociology
- SPAN 10000-59999 - Spanish
- THTR 10000-59999 - Theatre
- WGSS 10000-59999 - Women's, Gender, And Sexuality Studies
- AGECEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECEC 20400 - Introduction To Resource Economics And Environmental Policy
- AGECEC 21700 - Economics
- AGECEC 25000 - Economic Geography Of World Food And Resources
- AGECEC 30500 - Agricultural Prices
- AGECEC 33300 - Food Distribution - A Retailing Perspective
- AGECEC 34000 - International Economic Development
- AGECEC 40600 - Natural Resource And Environmental Economics
- AGECEC 41000 - Agricultural Policy
- AGECEC 45000 - International Agricultural Trade
- AGR 20100 - Communicating Across Culture
- AGRY 12300 - Genetics And Society
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- ASEC 33100 - The Role Of Horses In Human History, Culture And Society
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- ENGL 23100 - Introduction To Literature
- ENGL 23200 - Thematic Studies In Literature
- ENGL 23700 - Introduction To Poetry
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- ENGL 25000 - Great American Books
- ENGL 25700 - Literature Of Black America
- ENGL 26200 - Greek And Roman Classics In Translation
- ENGL 26400 - The Bible As Literature
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- ENGL 26700 - World Literature: From 1700 A.D. To The Present
- ENGL 27600 - Shakespeare On Film
- ENGL 27900 - The American Short Story In Print And Film

- ENGL 33100 - Medieval English Literature
- ENGL 35800 - Black Drama
- ENGL 35000 - American Literature Before 1865
- ENGL 35100 - American Literature After 1865
- ENGL 36000 - Gender And Literature
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- ENGL 38700 - History Of Film Since 1950
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- ENGL 41100 - Studies In Major Authors
- ENGL 41200 - Studies In Genre
- ENGL 41300 - Studies In Literature And History
- ENGL 41400 - Studies In Literature And Culture
- ENGL 44100 - Chaucer's Canterbury Tales
- ENGL 44200 - Shakespeare
- ENGL 46200 - The Bible As Literature: The Old Testament
- ENGL 46300 - The Bible As Literature: The New Testament
- ENGL 49200 - Literature In The Secondary Schools
- FNR 37500 - Human Dimensions of Natural Resource Management
- HDFFS 28000 - Diversity In Individual And Family Life
- HORT 30600 - History Of Horticulture
- HORT 45000 - In The English Landscape: Integrating History, Horticulture, And Landscape Architecture
- LA 45000 - In The English Landscape: Integrating History, Horticulture, and Landscape Architecture
- SLHS 22700 - Elements Of Linguistics

## Agriculture Humanities or Social Sciences Selective (30000-59999)

- AAS 30000-59999 - African American Studies
- AD 30000-59999 - Art and Design
- AMST 30000-59999 - American Studies
- ANTH 30000-59999 - Anthropology
- ARAB 30000-59999 - Arabic
- ASAM 30000-59999 - Asian American Studies
- ASL 30000-59999 - American Sign Language
- BAND 30000-59999 - Bands (Maximum of 3 credits can be used for Humanities)
- CHNS 30000-59999 - Chinese
- CLCS 30000-59999 - Classics
- CMPL 30000-59999 - Comparative Literature
- DANC 30000-59999 - Dance
- ECON 30000-59999 - Economics
- FR 30000-59999 - French
- FVS 30000-59999 - Film and Video Studies

- GER 30000-59999 - German
- GREK 30000-59999 - Greek
- HEBR 30000-59999 - Hebrew
- HIST 30000-59999 - History
- IDIS 30000-59999 - Interdisciplinary Studies
- ITAL 30000-59999 - Italian
- JPNS 30000-59999 - Japanese
- JWST 30000-59999 - Jewish Studies
- KOR 30000:59999 - Korean
- LALS 30000-59999 - Latin America and Latino Studies
- LATN 30000-59999 - Latin
- LC 30000-59999 - Languages and Cultures
- LING 30000-59999 - Linguistics
- MARS 30000-59999 - Medieval and Renaissance Studies
- MUS 30000-59999 - Music
- PHIL 30000-59999 - Philosophy
- POL 30000-59999 - Political Science
- PSY 30000-59999 - Psychological Sciences
- PTGS 30000-59999 - Portuguese
- REL 30000-59999 - Religious Studies
- RUSS 30000-59999 - Russian
- SOC 30000-59999 - Sociology
- SPAN 30000-59999 - Spanish
- THTR 30000-59999 - Theatre
- WGSS 30000-59999 - Women's, Gender, And Sexuality Studies
- AGECEC 30500 - Agricultural Prices
- AGECEC 33300 - Food Distribution - A Retailing Perspective
- AGECEC 34000 - International Economic Development
- AGECEC 40600 - Natural Resource And Environmental Economics
- AGECEC 41000 - Agricultural Policy
- AGECEC 45000 - International Agricultural Trade
- ASECEC 30100 - Building Intercultural Partnerships
- ASECEC 33100 - The Role Of Horses In Human History, Culture And Society
- ASECEC 35500 - Controversial Science And Media In The Public Sphere
- ENGL 33100 - Medieval English Literature
- ENGL 35000 - American Literature Before 1865
- ENGL 35100 - American Literature After 1865
- ENGL 35800 - Black Drama
- ENGL 36000 - Gender And Literature
- ENGL 37300 - Science Fiction And Fantasy
- ENGL 37700 - Modern And Contemporary Poetry
- ENGL 37900 - The Short Story
- ENGL 38100 - The British Novel
- ENGL 38200 - The American Novel
- ENGL 38600 - History Of Film To 1950
- ENGL 38700 - History Of Film Since 1950
- ENGL 39600 - Studies In Literature And Language



- ENGL 41100 - Studies In Major Authors
- ENGL 41200 - Studies In Genre
- ENGL 41300 - Studies In Literature And History
- ENGL 41400 - Studies In Literature And Culture
- ENGL 44100 - Chaucer's Canterbury Tales
- ENGL 44200 - Shakespeare
- ENGL 46200 - The Bible As Literature: The Old Testament
- ENGL 46300 - The Bible As Literature: The New Testament
- ENGL 49200 - Literature In The Secondary Schools
- FNR 37500 - Human Dimensions of Natural Resource Management
- HORT 30600 - History Of Horticulture
- HORT 45000 - In The English Landscape: Integrating History, Horticulture, And Landscape Architecture
- LA 45000 - In The English Landscape: Integrating History, Horticulture, and Landscape Architecture

## Human Cultures: Humanities Selectives

University Core Curriculum listing

## Human Cultures: Behavioral/Social Sciences Selectives

University Core Curriculum listing

# College of Agriculture International Understanding Selective

## International Understanding

- AGECE 25000 - Economic Geography Of World Food And Resources
- AGECE 34000 - International Economic Development
- AGECE 45000 - International Agricultural Trade
- AGR 49500 - International Professional Experience In Agriculture, Food, Or Natural Resources
- AGR 49300 - Special Topics In International Agriculture
- AGRY 28500 - World Crop Adaptation And Distribution
- AGRY 35000 - Global Awareness
- ANSC 29400 - Exploring International Animal Agriculture
- ANSC 33100 - The Role Of Horses In Human History, Culture, And Society
- ANTH 10000 - Being Human: Introduction To Anthropology
- ANTH 20500 - Human Cultural Diversity
- ARAB 10000-59900 - Arabic
- ASEC 30100 - Building Intercultural Partnerships
- ASEC 33100 - The Role Of Horses In Human History, Culture And Society
- ASEC 43100 - Planning For International Engagement Methods
- ASEC 43110 - International Engagement Methods

- ASEC 43120 - Evaluating International Engagement Methods
- ASEC 53100 - Global Learning For Agriculture, Food And Natural Resources
- ASEC 55100 - International Engagement And Development Strategies
- CHNS 10000-59900 - Chinese
- CLCS 10000-59900 - Classics
- BTNY 28500 - Plants And Civilization
- BTNY 43100 - Planning For International Engagement Methods
- BTNY 43110 - International Engagement Methods
- BTNY 43120 - Evaluating International Engagement Methods
- COM 22400 - Communicating In The Global Workplace
- ECON 37000 - International Trade
- ECON 46600 - International Economics
- ENGL 26600 - World Literature: From The Beginnings To 1700 A.D.
- ENGL 26700 - World Literature: From 1700 A.D. To The Present
- FNR 23000 - The World's Forests And Society
- FNR 30200 - Global Sustainability Issues
- FNR 46000 - International Natural Resources Summer Program
- FR 10000-59900 - French
- GER 10000-59900 - German
- GREK 10000-59900 - Greek
- HEBR 10000-59900 - Hebrew
- HIST 10400 - Introduction To The Modern World
- HIST 10500 - Survey Of Global History
- HIST 23005 - Hitler's Europe
- HIST 23800 - History Of Russia From Medieval Times To 1861
- HIST 23900 - History Of Russia From 1861 To The Present
- HIST 24000 - East Asia And Its Historic Tradition
- HIST 24100 - East Asia In The Modern World
- HIST 24300 - South Asian History And Civilizations
- HIST 24600 - Modern Middle East And North Africa
- HIST 27100 - Introduction To Colonial Latin American History (1492-1810)
- HIST 27200 - Introduction To Modern Latin American History (1810 To The Present)
- HIST 30000 - Eve Of Destruction: Global Crises And World Organization In The 20th Century
- HIST 31205 - The Arab-Israeli Conflict
- HIST 31905 - Christianity In The Global Age
- HIST 32300 - German History
- HIST 32400 - Modern France
- HIST 33700 - Europe In The Age Of The Cold War
- HIST 34000 - Modern China
- HIST 34300 - Traditional Japan
- HIST 34400 - History Of Modern Japan
- HIST 35100 - The Second World War
- HIST 37005 - Queens And Empresses In Early Modern Europe
- HIST 38700 - History Of The Space Age
- HIST 40800 - Dictatorship And Democracy: Europe 1919-1945
- HIST 43900 - Communist China
- HIST 44100 - Africa In The Twentieth Century
- HIST 59500 - The Holocaust And Genocide

- HORT 30600 - History Of Horticulture
- HORT 40300 - Tropical Horticulture
- HORT 45000 - In The English Landscape: Integrating History, Horticulture, And Landscape Architecture
- HTM 39800 - International Special Topics
- ITAL 10000-59999 - Italian
- JPNS 10000-59999 - Japanese
- KOR 10000-59999 - Korean
- LATN 10000-59999 - Latin
- LA 45000 - In The English Landscape: Integrating History, Horticulture, and Landscape Architecture
- LA 16600 - History And Theory Of Landscape Architecture
- PHIL 11000 - The Big Questions: Introduction To Philosophy
- PHIL 11400 - Global Moral Issues
- PHIL 23000 - Religions Of The East
- PHIL 23100 - Religions Of The West
- POL 13000 - Introduction To International Relations
- POL 14100 - Governments Of The World
- POL 23100 - Introduction To United States Foreign Policy
- POL 23200 - Contemporary Crises In International Relations
- POL 23500 - International Relations Among Rich And Poor Nations
- POL 23700 - Modern Weapons And International Relations
- POL 32700 - Global Green Politics
- POL 33500 - China And The Challenges Of Globalization
- POL 34500 - West European Democracies In The Post-Industrial Era
- POL 34800 - East Asian Politics
- POL 42300 - International Environmental Policy
- POL 43300 - International Organization
- POL 43500 - International Law
- PTGS 10000-59900 - Portuguese
- REL 23000 - Religions Of The East
- REL 23100 - Religions Of The West
- RUSS 10000-59900 - Russian
- SPAN 10000-59900 - Spanish

## **College of Agriculture Multicultural Awareness Selective**

### **Multicultural Awareness**

- AGR 20100 - Communicating Across Culture
- ANTH 20500 - Human Cultural Diversity
- ANTH 37900 - Native American Cultures
- EDCI 28500 - Multiculturalism And Education
- HIST 37700 - History And Culture Of Native America
- PSY 33500 - Stereotyping And Prejudice
- SFS 41100 - Structural Racism In US Agriculture
- SFS 41200 - Colonialism, Globalization, And Food Justice
- SFS 41300 - The Cultures And Agricultures Of The United States

- SOC 22000 - Social Problems
- SOC 31000 - Race And Ethnicity
- SOC 35600 - Hate And Violence

## **Interdisciplinary Agriculture Supplemental Information**

### **Agriculture Selective (15 credits)**

- ABE 10000:59999
- AGECE 10000:59999
- AGR 10000:59999
- AGRY 10000:59999
- ANSC 10000:59999
- ASEC 10000:59999
- ASM 10000:59999
- BCHM 10000:59999
- BTNY 10000:59999
- ENTM 10000:59999
- FNR 10000:59999
- FS 10000:59999
- HORT 10000:59999
- LA 10000:59999
- NRES 10000:59999
- SFS 10000:59999

### **Agriculture Selective 30000+ Level (21 credits)**

- ABE 30000:59999
- AGECE 30000:59999
- AGR 30000:59999
- AGRY 30000:59999
- ANSC 30000:59999
- ASEC 30000:59999
- ASM 30000:59999
- BCHM 30000:59999
- BTNY 30000:59999
- ENTM 30000:59999
- FNR 30000:59999
- FS 30000:59999
- HORT 30000:59999
- LA 30000:59999
- NRES 30000:59999
- SFS 30000:59999

**College of Agriculture: Additional Mathematics or Science Selectives**

- AGR 33300 - Data Science For Agriculture
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 45100 - Applied Econometrics
- AGRY 12500 - Environmental Science And Conservation
- AGRY 25500 - Soil Science
- AGRY 27000 - Forest Soils
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 46500 - Soil Physical Properties
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- BCHM 10000 - Introduction To Biochemistry
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- BTNY 11000 - Introduction To Plant Science
- BTNY 26200 - Plant Structure And Tissue Biology
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 53500 - Plant Disease Epidemiology
- CHM 22400 - Introductory Quantitative Analysis
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- CHM 26100 - Organic Chemistry I
- CHM 26200 - Organic Chemistry II
- CHM 26300 - Organic Chemistry Laboratory I
- CHM 26400 - Organic Chemistry Laboratory II
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- CS 18000 - Problem Solving And Object-Oriented Programming
- EAPS 11100 - Physical Geology
- EAPS 11200 - Earth Through Time
- EAPS 12500 - Environmental Science And Conservation
- EAPS 22100 - Survey Of Atmospheric Science
- ENTM 10200 - The Practice Of Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory

- ENTM 21000 - Introduction To Insect Behavior
- ENTM 24200 - Data Science
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 30100 - Experimentation And Analysis
- ENTM 31200 - Plant-Insect Chemical Ecology
- ENTM 32810 - Practical Molecular Biology
- ENTM 35300 - Insecticides And Environment
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 12500 - Environmental Science And Conservation
- FNR 20100 - Marine Biology
- FNR 23000 - The World's Forests And Society
- FNR 24000 - Wildlife In America
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 30500 - Conservation Genetics
- FNR 35700 - Fundamental Remote Sensing
- HONR 49900 - Honors Research Project (Title: Human Diseases and Disorders)
- HORT 10100 - Fundamentals Of Horticulture
- HORT 30100 - Plant Physiology
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- NRES 12500 - Environmental Science And Conservation
- NRES 23000 - Survey Of Meteorology
- NRES 25500 - Soil Science
- PHYS 17200 - Modern Mechanics
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- PHYS 23300 - Physics For Life Sciences I
- PHYS 23400 - Physics For Life Sciences II
- PHYS 24100 - Electricity And Optics
- STAT 22500 - Introduction To Probability Models
- STAT 50200 - Experimental Statistics II
- STAT 51100 - Statistical Methods
- STAT 51200 - Applied Regression Analysis

## **Natural Resources and Environmental Science Supplemental Information**

See below for:

- **NRES General Selectives**
  - Additional Mathematics or Statistics Selective

- Broadening Science Selective
- Data Science Selective
- **Concentration Specific Selectives**
  - Climate and Energy Solutions Concentration Selectives
  - Emerging Environmental Challenges Concentration Selectives
  - Environmental Policy and Analysis Concentration Selectives
  - Environmental Quality and Restoration Concentration Selectives
  - Sustainability Science Concentration Selectives
  - Watershed Management Concentration Selectives

## Broadening Science Selective (3 credits)

Courses meant to encourage exploration at introductory level in related fields, or to encourage optional laboratory courses. In addition to the College of Agriculture's 'Additional Math and Science Selectives', any concentration selective that is not being used to complete the NRES requirement can count.

*Concentrations requiring this selective: Climate & Energy Solutions; Emerging Environmental Challenges; Environmental Policy & Analysis; Environmental Quality & Restoration; Watershed Management; Sustainability Science*

- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- AGEC 45100 - Applied Econometrics
- AGRY 25500 - Soil Science
- AGRY 27000 - Forest Soils
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 46500 - Soil Physical Properties
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- BCHM 10000 - Introduction To Biochemistry
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BTNY 26200 - Plant Structure And Tissue Biology
- BTNY 30100 - Introductory Plant Pathology

- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- CHM 22400 - Introductory Quantitative Analysis
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- CHM 25701 - Organic Chemistry Laboratory
- CHM 26100 - Organic Chemistry I
- CHM 26200 - Organic Chemistry II
- CHM 26300 - Organic Chemistry Laboratory I
- CHM 26400 - Organic Chemistry Laboratory II
- CS 15900 - C Programming
- CS 18000 - Problem Solving And Object-Oriented Programming
- EAPS 11100 - Physical Geology
- EAPS 11200 - Earth Through Time
- EAPS 12500 - Environmental Science And Conservation
- EAPS 22100 - Survey Of Atmospheric Science
- ENTM 10200 - The Practice Of Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 30100 - Experimentation And Analysis
- ENTM 31200 - Plant-Insect Chemical Ecology
- ENTM 32810 - Practical Molecular Biology
- ENTM 35300 - Insecticides And Environment
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 20100 - Marine Biology
- FNR 23000 - The World's Forests And Society
- FNR 24000 - Wildlife In America
- FNR 30500 - Conservation Genetics
- FNR 35700 - Fundamental Remote Sensing
- HORT 30100 - Plant Physiology
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- NRES 23000 - Survey Of Meteorology
- NRES 25500 - Soil Science
- PHYS 17200 - Modern Mechanics
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- PHYS 23300 - Physics For Life Sciences I
- PHYS 23400 - Physics For Life Sciences II
- PHYS 24100 - Electricity And Optics



## Additional Mathematics and Statistic Selective

Required for all concentrations except Climate & Energy

- EAPS 31000 - Introductory Statistics For Geosciences
- MA 16020 - Applied Calculus II
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- SOC 38200 - Introduction To Statistics In Sociology
- STAT 22500 - Introduction To Probability Models
- STAT 30301 - Probability And Statistics For Business
- STAT 35500 - Statistics For Data Science
- STAT 50200 - Experimental Statistics II

## NRES Data Science Selective (3 credits)

- AGECE 20201 - Introduction To Data Analytics For Agricultural Business
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 45100 - Applied Econometrics
- AGECE 51600 - Mathematical Tools For Agricultural And Applied Economics
- AGR 33300 - Data Science For Agriculture
- AGRY 54500 - Remote Sensing Of Land Resources
- BTNY 20800 - Introduction To Plant Science Research
- CS 17700 - Programming With Multimedia Objects
- ENTM 24200 - Data Science
- ENTM 30100 - Experimentation And Analysis
- FNR 35700 - Fundamental Remote Sensing
- STAT 22500 - Introduction To Probability Models
- STAT 30301 - Probability And Statistics For Business
- STAT 35500 - Statistics For Data Science
- STAT 50200 - Experimental Statistics II
- STAT 50300 - Statistical Methods For Biology
- STAT 51100 - Statistical Methods
- FNR 35910 - Spatial Ecology and
- FNR 35950 - Spatial Ecology Laboratory

## NRES Concentration Selectives

### Climate and Energy Solutions Concentration Selectives (12 credits)

- AD 39700 - Sustainability In The Built Environment
- ANTH 21000 - Technology And Culture
- ASEC 35500 - Controversial Science And Media In The Public Sphere
- EAPS 10900 - The Dynamic Earth

- EAPS 31500 - Biogeochemistry
- EAPS 32700 - Climate, Science And Society
- EAPS 37500 - Great Issues - Fossil Fuels, Energy And Society
- EAPS 42000 - Global Change Modeling
- EAPS 53000 - Extreme Weather And Climate: Science And Risk
- ECET 22400 - Electronic Systems
- EPCS 40100 - Senior Participation In EPICS or
- EPCS 40200 - Senior Participation In EPICS
- EEE 35500 - Engineering Environmental Sustainability
- MET 53000 - Facilities Engineering Technology
- NRES 38010 - Hazardous Waste Handling
- PHIL 40300 - Moral Psychology And Climate Change
- POL 42800 - The Politics Of Regulation

## Emerging Environmental Challenges Concentration Selectives (21 credits)

Students define an interdisciplinary topic of study that is not currently captured by any existing majors on campus. In consultation with a faculty mentor and/or the co-directors the student will propose a sequence of classes that addresses the identified topic.

1. All NRES core academic requirements must be met.
2. No more than 2 classes can be under 30000+ level.
3. The classes as a group should pursue an environmentally related subject.
4. The courses should not originate from a single department. NRES strives to be interdisciplinary, and the student initiated concentration should be interdisciplinary.
5. The student must meet with his/her academic advisor to plan the student initiated concentration.
6. The NRES director must approve the selected courses.
7. No more than 3 credits can come from independent study.

## Environmental Policy and Analysis Concentration Selectives (12 credits)

- AGECE 41000 - Agricultural Policy
- ANTH 32700 - Environment And Culture
- CE 51200 - Urban Planning And Analysis
- ECON 25200 - Macroeconomics
- ECON 36700 - Law And Economics
- ENGL 34400 - Environmental Ethics, Policy, And Sustainability
- EPCS 40100 - Senior Participation In EPICS or
- EPCS 40200 - Senior Participation In EPICS
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 58600 - Urban Ecology
- NRES 38010 - Hazardous Waste Handling
- NRES 48500 - Environmental Communications
- PHIL 29000 - Environmental Ethics
- POL 32300 - Comparative Environmental Policy
- POL 42300 - International Environmental Policy
- POL 42800 - The Politics Of Regulation
- POL 46100 - Constitutional Law I

- POL 52300 - Environmental Politics And Public Policy
- SOC 34400 - Environmental Sociology
- SOC 41900 - Sociology Of Law

## Environmental Quality and Restoration Concentration Selectives (12 credits)

- ABE 42500 - Water Quality Engineering
- ABE 42600 - Ecological Restoration Engineering
- AGRY 33500 - Weather And Climate
- AGRY 33700 - Environmental Hydrology
- AGRY 34900 - Soil Ecology
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 45000 - Soil Conservation and Water Management
- AGRY 56500 - Soils And Landscapes
- AGRY 58500 - Soils And Land Use
- ASM 23600 - Environmental Systems Management
- CE 45700 - Air Pollution Control And Design
- CE 55700 - Air Quality Management
- EEE 30000 - Environmental And Ecological Systems Modeling
- EEE 35000 - Introduction To Environmental And Ecological Engineering
- EEE 35500 - Engineering Environmental Sustainability
- EPCS 40100 - Senior Participation In EPICS or
- EPCS 40200 - Senior Participation In EPICS
- FNR 20100 - Marine Biology
- FNR 35100 - Aquatic Sampling Techniques
- FNR 35500 - Quantitative Methods For Resource Management
- FNR 35700 - Fundamental Remote Sensing
- FNR 58600 - Urban Ecology
- HSCI 20200 - Essentials Of Environmental, Occupational, And Radiological Health Sciences
- HSCI 34500 - Introduction To Occupational And Environmental Health Sciences
- NRES 23000 - Survey Of Meteorology
- SFS 30200 - Principles Of Sustainability

## Sustainability Science Concentration Selectives (12 credits)

- AD 39700 - Sustainability In The Built Environment
- AGECE 52800 - Global Change And The Challenge Of Sustainably Feeding A Growing Planet
- ANTH 39300 - Interdisciplinary Approaches To Environmental And Sustainability Studies
- ASM 23600 - Environmental Systems Management
- EDCI 50600 - Environmental Education
- ENGL 34400 - Environmental Ethics, Policy, And Sustainability
- EPCS 40100 - Senior Participation In EPICS or
- EPCS 40200 - Senior Participation In EPICS
- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 30200 - Global Sustainability Issues
- HTM 37000 - Sustainable Tourism And Responsible Travel

- IET 23500 - Introduction To Systems Thinking And Process Improvement
- NRES 38010 - Hazardous Waste Handling
- SYS 30000 - It's A Complex World - Addressing Global Challenges
- TECH 52200 - Sustainability Foundations
- TECH 52300 - Sustainable Critical Infrastructures
- TECH 52400 - Sustainability Analysis Assessment

## Watershed Management Concentration Selectives (12 credits)

- ABE 32500 - Soil And Water Resource Engineering
- AGRY 33500 - Weather And Climate
- AGRY 34900 - Soil Ecology
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 56000 - Soil Physics
- AGRY 56500 - Soils And Landscapes
- AGRY 58500 - Soils And Land Use
- ASM 23600 - Environmental Systems Management
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- CE 54900 - Computational Watershed Hydrology
- EDCI 50600 - Environmental Education
- EEE 30000 - Environmental And Ecological Systems Modeling
- EPCS 40100 - Senior Participation In EPICS or
- EPCS 40200 - Senior Participation In EPICS
- FNR 35100 - Aquatic Sampling Techniques
- FNR 35700 - Fundamental Remote Sensing
- FNR 35900 - Spatial Ecology And GIS
- FNR 58600 - Urban Ecology
- NRES 23000 - Survey Of Meteorology
- NRES 38010 - Hazardous Waste Handling
- SFS 30100 - Agroecology

## Pre-Veterinary Medicine Supplemental Information

### Agricultural Selective (9 credits)

- ABE 10000:59999
- AGEC 10000:59999
- AGR 10000:59999
- AGRY 10000:59999
- ANSC 10000:59999
- ASEC 10000:59999
- ASM 10000:59999
- BCHM 10000:59999
- BTNY 10000:59999
- ENTM 10000:59999
- FNR 10000:59999

- FS 10000:59999
- HORT 10000:59999
- LA 10000:59999
- NRES 10000:59999
- SFS 10000:59999

# Department of Agricultural and Biological Engineering

## Overview

Welcome to the Department of Agricultural & Biological Engineering at Purdue University. Our mission is to prepare students, citizens, and industry for the future through innovative education and extension/outreach programs and the discovery of knowledge.

Our cross-disciplinary strengths include academic and research programs in agriculture, biology, and engineering, as well as dual degree programs. Agricultural and Biological Engineering offers three degree programs, including two engineering programs: Bachelor of Science in Engineering in Agricultural Engineering (BSAGE) and Bachelor of Science in Engineering in Biological Engineering (BSBE), and one agriculture program: Agricultural Systems Management, BS. ABE's degree programs also offer multiple majors and concentrations. The job market remains strong for our graduates who have excellent career opportunities, and demand for our graduates is very high.

Our faculty, students and staff are pursuing cutting-edge research that improves quality of life as well as advances scientific and engineering frontiers. Our extension programs are helping citizens of Indiana and beyond improve their lives.

## Agricultural Systems Management

The Agricultural Systems Management program prepares graduates to develop and manage technology-intensive agricultural production and processing systems. ASM graduates are problem solvers. They benefit from a diverse applied agricultural curriculum that includes opportunities for extensive career-related experience at home and abroad.

## Biological Engineering

This program deals with the applications of basic scientific and engineering principles to the design, development and operation of large scale manufacture of food and biologically-based products. Such products are environmentally friendly, renewable and represent a future wave of consumer demand for better health and environment. In addition to learning the engineering aspects of food and biological processing, you will also learn the basic principles in biochemistry and food sciences.

Dual Degree programs with Biological Engineering and Biochemistry or Pharmaceutical Sciences are also offered - these programs require an additional year of courses leading to two degrees.

## Agricultural Engineering - major in Environmental & Natural Resources Engineering

This major prepares engineers with specialized expertise to design and analyze new and environmentally sound ways to produce food and fiber while conserving our natural resources. Students gain expertise in areas such as watershed

management, geographic information systems, computer-based watershed modeling, and contaminant transport models, and soil and water conservation engineering practices.

## Agricultural Engineering - major in Machine Systems Engineering

This major prepares students with a background in mechanical design, hydraulics, instrumentation and control, finite element analysis, electronics and sensors to design, develop, analyze and operate machines and systems for agricultural and biological products and processes, materials handling, construction and mining, forestry, lawn- and ground-care, and food and fiber production and processing.

## Faculty (website)

## Department of Agricultural and Biological Engineering (website)

## Contact Information

Purdue University

Agricultural and Biological Engineering

225 South University Street  
West Lafayette, IN 47907-2093  
Phone: (765) 494-1162  
Fax: (765) 496-1115

Email: [joinabe@ecn.purdue.edu](mailto:joinabe@ecn.purdue.edu)

Current Students - [Click here for advising and degree requirement resources.](#)

Prospective Students - [Click here to learn more and schedule a visit.](#)

## Graduate Information

For Graduate information please see [Department of Agricultural and Biological Engineering \(Graduate\)](#)

## Baccalaureate

## Agricultural Engineering, BSAGE

## About the Program

Agricultural Engineers apply their knowledge of agricultural systems, natural resources, and engineering to equipment design and assure environmental compatibility of practices used by production agriculture. The Agricultural Engineering curriculum offers great breadth, with a major choice in machine systems engineering. Subject areas include computer-aided engineering, fluid power, finite element analysis, natural resource conservation, and engineering properties of biological materials. Excellent career opportunities exist in product engineering, equipment research and design, facilities design, and engineering management. Practical applications in lab intensive classes (every ABE 3-credit hour class has a lab) and significant opportunities to be involved in clubs (AgGrowBot, 1/4-Scale Tractor, PUP, ASABE Robotics) makes this a great program for entrepreneurs and start-up engineering companies. Students in this program earn a Bachelor of Science in Agricultural Engineering, (BSE-AGE).

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for scholarships and internships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

Current Students - [Click here for advising and degree requirement resources.](#)

Prospective Students - [Click here to learn more and schedule a visit.](#)

The Agricultural Engineering program is accredited by the Engineering Accreditation Commission of ABET.

[Agricultural Engineering Major Change \(CODO\) Requirements](#)

## Degree Requirements

# 128 Credits Required

## Departmental/Program Major Courses (34 credits)

### Required Major Courses (34 credits)

- ABE 20500 - Computations For Engineering Systems
- ABE 21000 - Thermodynamics Principles Of Engineering And Biological Systems
- ABE 29000 - Sophomore Seminar (satisfies Science, Technology, & Society for core)
- ABE 30500 - Physical Properties Of Biological Materials
- ABE 31400 - Design Of Electronic Systems
- ABE 32000 - Solid Modeling, Simulation, And Analysis
- ABE 32500 - Soil And Water Resource Engineering
- ABE 33000 - Design Of Machine Components

- ABE 43500 - Hydraulic Control Systems For Mobile Equipment
- ABE 45000 - Finite Element Method In Design And Optimization
- ABE 48400 - Project Planning And Management
- ABE 48600 - Agricultural Engineering Design (Capstone)
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering

## Other Departmental/Program Course Requirements (91-95 credits)

[Click here for First-Year Engineering Requirements](#)

[Click here for Pre-Agricultural and Biological Engineering Requirements](#)

- AGRY 25500 - Soil Science
- ENGR 13100 - Transforming Ideas To Innovation I (satisfies Information Literacy for core)
- ENGR 13200 - Transforming Ideas To Innovation II
- CE 34000 - Hydraulics and
- CE 34300 - Elementary Hydraulics Laboratory  
OR
- ME 30800 - Fluid Mechanics and
- ME 30801 - Fluid Mechanics Laboratory
- CHM 11500 - General Chemistry (satisfies Science #1 for core)  
**Programming or Chem II Selective**
- CHM 11600 - General Chemistry or
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects (Preferred)
- MA 16100 - Plane Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core)
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26200 - Linear Algebra And Differential Equations
- ME 27000 - Basic Mechanics I
- ME 27400 - Basic Mechanics II
- NUCL 27300 - Mechanics Of Materials
- PHYS 17200 - Modern Mechanics (satisfies Science #2 for core)
- PHYS 24100 - Electricity And Optics  
**Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Agricultural Selective - Credit Hours: 3.00
- Biological Science Selective - Credit Hours: 4.00
- Biological Science Selective - Credit Hours: 4.00
- Engineering Technical Selective - Credit Hours: 3.00
- Engineering Technical Selective - Credit Hours: 3.00



- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written and Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Elective (0-3 credits)

- Elective - Credit Hours: 0.00-3.00

## Supplemental Information

[Click here for Agricultural Engineering Supplemental Information](#)

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

[College of Agriculture Undergraduate Pass/No Pass Policy](#)

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

- Transfer courses listed in the Purdue Transfer Equivalency Guide with specific Purdue Subject codes (e. g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer credit courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

# Sample 4-Year Plan

## Fall 1st Year

- CHM 11500 - General Chemistry
- ENGR 13100 - Transforming Ideas To Innovation I
- MA 16500 - Analytic Geometry And Calculus I or
- MA 16100 - Plane Analytic Geometry And Calculus I
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

16-18 Credits

## Spring 1st Year

- CHM 11600 - General Chemistry or
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- ENGR 13200 - Transforming Ideas To Innovation II
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II
- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00

16-18 Credits

## Fall 2nd Year

- ABE 20500 - Computations For Engineering Systems
- ABE 29000 - Sophomore Seminar
- MA 26100 - Multivariate Calculus
- ME 27000 - Basic Mechanics I
- PHYS 24100 - Electricity And Optics
- Economics Selective - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics

17 Credits

## Spring 2nd Year

- ABE 21000 - Thermodynamics Principles Of Engineering And Biological Systems
- MA 26200 - Linear Algebra And Differential Equations
- ME 27400 - Basic Mechanics II
- NUCL 27300 - Mechanics Of Materials
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00

## 17 Credits

### Fall 3rd Year

- ABE 30500 - Physical Properties Of Biological Materials
- ABE 32500 - Soil And Water Resource Engineering
- AGRY 25500 - Soil Science
- CE 34000 - Hydraulics and
- CE 34300 - Elementary Hydraulics Laboratory  
OR
- ME 30800 - Fluid Mechanics and
- ME 30801 - Fluid Mechanics Laboratory
- Agricultural Selective - Credit Hours: 3.00

## 17 Credits

### Spring 3rd Year

- ABE 31400 - Design Of Electronic Systems
- ABE 32000 - Solid Modeling, Simulation, And Analysis
- ABE 33000 - Design Of Machine Components
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 16 Credits

### Fall 4th Year

- ABE 43500 - Hydraulic Control Systems For Mobile Equipment
- ABE 45000 - Finite Element Method In Design And Optimization
- ABE 48400 - Project Planning And Management
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- Engineering Technical Selective - Credit Hours: 3.00
- Written and Oral Communication Selective (20000+level) - Credit Hours: 3.00

## 14 Credits

### Spring 4th Year

- ABE 48600 - Agricultural Engineering Design
- Engineering Technical Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-3.00

## 13-15 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# Agricultural Systems Management, BS

## About the Program

Agricultural Systems Management (ASM) prepares individuals to organize and manage environmentally sound, technology-based businesses. The program's emphasis is on planning and directing an industry or business project with responsibility for results. ASM is based on an understanding of how equipment and buildings are used with plants and animals and their products. These processes require an understanding of the biological sciences to produce and maintain top product quality.

Computer skills are taught and used throughout the curriculum. Computers are used to collect and analyze data, and then using that information, to control machines and processes. Other uses involve planning layouts of equipment and buildings, creating graphics for reports, etc.

Agricultural Systems Management students also take several of courses in communications, business management and agricultural sciences, in addition to their specialty courses based in the Agricultural and Biological Engineering Department. The program provides an in-depth technical knowledge for selecting and applying advanced technologies in the food, feed, fiber, and fuel system. Graduates are prepared to solve a wide variety of business and technical problems in a job field that continues to grow.

Agricultural Systems Management students also take several of courses in communications, business management and agricultural sciences, in addition to their specialty courses based in the Agricultural and Biological Engineering Department. The program provides an in-depth technical knowledge for selecting and applying advanced technologies in the food, feed, fiber, and fuel system. Graduates are prepared to solve a wide variety of business and technical problems in a job field that continues to grow.

In addition to the established Agricultural Systems Management program, students can choose to specialize in one of the following concentrations.

- Data & Information Systems
- Leadership & Management
- Agro-Security

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for scholarships and internships
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

Agricultural Systems Management Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (49 credits)

### Required Major Courses (22 credits)

- ASM 10400 - Introduction To Agricultural Systems
- ASM 10500 - Computing Technology With Applications ♦
- ASM 21100 - Technical Graphic Communications
- ASM 22100 - Career Opportunities Seminar
- ASM 22200 - Crop Production Equipment
- ASM 33300 - Facilities Planning And Management
- ASM 35000 - Safety In Agriculture
- ASM 42100 - Senior Seminar
- ASM 49400 - Project Planning And Management
- ASM 49500 - Agricultural Systems Management Capstone Project

### Major Course Selectives (27 credits)

## Major Selectives (12 credits)

- ASM 23600 - Environmental Systems Management (satisfies Science, Technology and Society for core) or
- ASM 24500 - Materials Handling And Processing
- ASM 34500 - Power Units And Power Trains
- ASM 42000 - Electric Power And Controls
- ASM Major Selective (any ASM course 40000+ level) - Credit Hours: 3.00

## Agriculture Selective (15 credits)

- AGECE 31000 - Farm Organization or
- AGECE 33000 - Management Methods For Agricultural Business
- Agricultural Selective - Credit Hours: 12.00

## Other Departmental/Program Course Requirements (67-70 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11100 - Introduction To Agricultural And Biological Engineering Academic Programs
- AGECE 33100 - Principles Of Industrial Selling
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGRY 25500 - Soil Science
- MGMT 45500 - Legal Background For Business I or
- AGECE 45500 - Agricultural Law
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- PHYS 21400 - The Nature Of Physics ♦
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- ECON 25100 - Microeconomics (satisfies Human Cultures: Behavioral/Social Sciences for core)  
**Marketing Selective** - Credit Hours: 3.00
- AGECE 22000 - Economics Of Agricultural Markets
- AGECE 32100 - Principles Of Commodity Marketing
- AGECE 32700 - Principles Of Food And Agribusiness Marketing
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Science, Technology & Society Selective - Credit Hours: 1.00-3.00 (satisfies Science, Technology & Society for core)

- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (1-4 credits)

- Electives - Credit Hours: 1.00-4.00

## Supplemental Information

Selective Courses: Agricultural Systems Management Supplemental Information

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.



## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11100 - Introduction To Agricultural And Biological Engineering Academic Programs
- ASM 10400 - Introduction To Agricultural Systems
- CHM 11100 - General Chemistry ♦
- MA 16010 - Applied Calculus I
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00

16 Credits

### Spring 1st Year

- ASM 10500 - Computing Technology With Applications ♦
- CHM 11200 - General Chemistry
- PHYS 21400 - The Nature Of Physics ♦
- Written Communication Selective - Credit Hours: 3.00-4.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- ECON 25100 - Microeconomics

15-16 Credits

### Fall 2nd Year

- ASM 21100 - Technical Graphic Communications
- ASM 22100 - Career Opportunities Seminar
- ASM 22200 - Crop Production Equipment
- STAT 30100 - Elementary Statistical Methods ♦
- Biological Science Selective - Credit Hours: 4.00

14 Credits

### Spring 2nd Year

- AGECE 31000 - Farm Organization or
- AGECE 33000 - Management Methods For Agricultural Business
- ASM 23600 - Environmental Systems Management or
- ASM 24500 - Materials Handling And Processing
- AGRY 25500 - Soil Science
- ASM 33300 - Facilities Planning And Management
- Biological Science Selective - Credit Hours: 4.00

16 Credits

### Fall 3rd Year

- AGEC 33100 - Principles Of Industrial Selling
- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- Agricultural Selective - Credit Hours: 3.00
- Science, Technology, & Society Selective - Credit Hours: 1.00-3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 13-15 Credits

### Spring 3rd Year

- ASM 34500 - Power Units And Power Trains
- ASM 35000 - Safety In Agriculture
- ASM 42000 - Electric Power And Controls
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- Marketing Selective - Credit Hours: 3.00
- AGEC 22000 - Economics Of Agricultural Markets or
- AGEC 32100 - Principles Of Commodity Marketing or
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- Humanities or Social Science Selective - Credit Hours: 3.00

## 16 Credits

### Fall 4th Year

- ASM 42100 - Senior Seminar
- ASM 49400 - Project Planning And Management
- AGEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- Agricultural Selective - Credit Hours: 3.00
- Agricultural Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 14 Credits

### Spring 4th Year

- ASM 49500 - Agricultural Systems Management Capstone Project
- Agricultural Selective - Credit Hours: 3.00
- ASM Major Selective (any ASM course 40000+ level) - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-4.00

## 13-16 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

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The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agricultural Systems Management: AgroSecurity, BS**

### About the Program

The Agro-security concentration enables students to acquire a higher level of specialization in the principles and practices needed to pursue employment in areas related to the prevention, preparedness, mitigation, response, and recovery related to threats to agricultural resources from field to table. Agriculture is vulnerable to a wide range of threats with the potential of disrupting both local and national food security. Completion of this concentration will open up opportunities in positions that address loss prevention, risk management, regulatory compliance, and emergency management. Students can still also get the Food and Agribusiness Management Minor

Agricultural Systems Management (ASM) prepares individuals to organize and manage technology in business. The program's emphasis is on planning and directing an industry or business project with responsibility for results. ASM is based on an understanding of how equipment and buildings are used with plants and animals and their products. These processes require an understanding of the biological sciences to produce and maintain top product quality.

Computer skills are taught and used throughout the curriculum. Computers are used to collect and analyze data, and then using that information, to control machines and processes. Other uses involve planning layouts of equipment and buildings, creating graphics for reports, etc.

Agricultural Systems Management students also take several of courses in communications, business management and agricultural sciences, in addition to their specialty courses based in the Agricultural and Biological Engineering Department. The program provides an in-depth technical knowledge for selecting and applying advanced technologies in the food, feed, fiber, and fuel system. Graduates are prepared to solve a wide variety of business and technical problems in a job field that continues to grow.

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for internships and undergraduate research
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

Agricultural Systems Management Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (49 credits)

### Required Major Courses (22 credits)

- ASM 10400 - Introduction To Agricultural Systems
- ASM 10500 - Computing Technology With Applications
- ASM 21100 - Technical Graphic Communications
- ASM 22100 - Career Opportunities Seminar
- ASM 22200 - Crop Production Equipment
- ASM 33300 - Facilities Planning And Management
- ASM 35000 - Safety In Agriculture
- ASM 42100 - Senior Seminar
- ASM 49400 - Project Planning And Management
- ASM 49500 - Agricultural Systems Management Capstone Project

### AgroSecurity Concentration Courses (27 credits)

- AGECE 33000 - Management Methods For Agricultural Business
- ASM 23600 - Environmental Systems Management (satisfies STS for core) or
- ASM 34500 - Power Units And Power Trains
- ASM 24500 - Materials Handling And Processing
- ASM 42000 - Electric Power And Controls
- ASM 51000 - Agrosecurity-Emergency Management For Agricultural Production Operations

- ASM 51100 - Foundations In Homeland Security Studies
- ASM 51200 - Managing Resources and Applications for Homeland Security
- Major Selective (any ASM course 40000+ level) - Credit Hours: 3.00  
**AgroSecurity Selective** - Credit Hours: 3.00
- ASM 59000 - Special Problems or
- NRES 38010 - Hazardous Waste Handling or
- TLI 35520 - Organization Development And Change

## Other Departmental/Program Course Requirements (67-70 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11100 - Introduction To Agricultural And Biological Engineering Academic Programs
- AGECEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences (BSS) for core) or
- ECON 25100 - Microeconomics (satisfies Human Cultures: Behavioral/Social Sciences (BSS) for core)
- AGECEC 33100 - Principles Of Industrial Selling
- AGECEC 35200 - Quantitative Techniques For Firm Decision Making
- AGECEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- AGRY 25500 - Soil Science
- CHM 11100 - General Chemistry (satisfies Science #1 for core)
- CHM 11200 - General Chemistry (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- PHYS 21400 - The Nature Of Physics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)  
**Marketing Selective** - Credit Hours: 3.00
- AGECEC 22000 - Economics Of Agricultural Markets
- AGECEC 32100 - Principles Of Commodity Marketing
- AGECEC 32700 - Principles Of Food And Agribusiness Marketing
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00 (see Supplemental Information)
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00 (see Supplemental Information)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Science, Technology & Society Selective - Credit Hours: 1.00-3.00 (satisfies Science, Technology, & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (1-4 credits)

- Electives - Credit Hours: 1.00-4.00

# Supplemental Information

Selective Courses: Agricultural Systems Management Supplemental Information

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.
- Consultation with an advisor may result in an altered plan customized for an individual student.

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

# University Requirements

## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11100 - Introduction To Agricultural And Biological Engineering Academic Programs
- ASM 10400 - Introduction To Agricultural Systems
- CHM 11100 - General Chemistry
- MA 16010 - Applied Calculus I
- Oral Communication Selective - Credit Hours: 3.00



- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- ECON 25100 - Microeconomics

## 16 Credits

### Spring 1st Year

- ASM 10500 - Computing Technology With Applications
- CHM 11200 - General Chemistry
- PHYS 21400 - The Nature Of Physics
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

## 15-16 Credits

### Fall 2nd Year

- ASM 21100 - Technical Graphic Communications
- ASM 22100 - Career Opportunities Seminar
- ASM 22200 - Crop Production Equipment
- STAT 30100 - Elementary Statistical Methods
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00

## 14 Credits

### Spring 2nd Year

- AGEC 33000 - Management Methods For Agricultural Business
- AGRY 25500 - Soil Science
- ASM 24500 - Materials Handling And Processing
- ASM 33300 - Facilities Planning And Management
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00

## 16 Credits

### Fall 3rd Year

- AGEC 33100 - Principles Of Industrial Selling
- ASM 23600 - Environmental Systems Management or
- ASM 34500 - Power Units And Power Trains  
AgroSecurity Selective - Credit Hours: 3.00
- ASM 59000 - Special Problems (3.00 credits) or
- NRES 38010 - Hazardous Waste Handling or
- TLI 35520 - Organization Development And Change
- Science, Technology & Society Selective - Credit Hours: 1.00-3.00

- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 13-15 Credits

### Spring 3rd Year

- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- ASM 35000 - Safety In Agriculture
- ASM 42000 - Electric Power And Controls
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 16 Credits

### Fall 4th Year

- ASM 42100 - Senior Seminar
- ASM 49400 - Project Planning And Management
- ASM 51000 - Agrosecurity-Emergency Management For Agricultural Production Operations
- ASM 51100 - Foundations In Homeland Security Studies
- AGEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- Marketing Selective - Credit Hours: 3.00
- AGEC 22000 - Economics Of Agricultural Markets or
- AGEC 32100 - Principles Of Commodity Marketing or
- AGEC 32700 - Principles Of Food And Agribusiness Marketing

## 14 Credits

### Spring 4th Year

- ASM 49500 - Agricultural Systems Management Capstone Project
- ASM 51200 - Managing Resources and Applications for Homeland Security
- Major Selective (any ASM course 40000+ level) - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-4.00

## 13-16 Credits

### Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agricultural Systems Management: Data and Information Systems, BS**

### About the Program

The Data and Information Systems concentration supports the growing data and information need in agriculture and is structured so that students can readily obtain the Computer and Information Systems minor. Industry is seeking graduates who understand cropping and animal agriculture; they also wish they had stronger information technology skills such as programming, app development, and data handling. This concentration addresses this need and complements the facility and equipment technology focus of the ASM major. Students will still also get the Food and Agribusiness Management Minor.

Agricultural Systems Management (ASM) prepares individuals to organize and manage environmentally sound, technology-based businesses. The program's emphasis is on planning and directing an industry or business project with responsibility for results. ASM is based on an understanding of how equipment and buildings are used with plants and animals and their products. These processes require an understanding of the biological sciences to produce and maintain top product quality.

Computer skills are taught and used throughout the curriculum. Computers are used to collect and analyze data, and then using that information, to control machines and processes. Other uses involve planning layouts of equipment and buildings, creating graphics for reports, etc. Agricultural Systems Management students also take several of courses in communications, business management and agricultural sciences, in addition to their specialty courses based in the Agricultural and Biological Engineering Department. The program provides an in-depth technical knowledge for

selecting and applying advanced technologies in the food, feed, fiber, and fuel system. Graduates are prepared to solve a wide variety of business and technical problems in a job field that continues to grow.

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

Agricultural Systems Management Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (49 credits)

### Required Major Courses (22 credits)

- ASM 10400 - Introduction To Agricultural Systems
- ASM 10500 - Computing Technology With Applications
- ASM 21100 - Technical Graphic Communications
- ASM 22100 - Career Opportunities Seminar
- ASM 22200 - Crop Production Equipment
- ASM 33300 - Facilities Planning And Management
- ASM 35000 - Safety In Agriculture
- ASM 42100 - Senior Seminar
- ASM 49400 - Project Planning And Management
- ASM 49500 - Agricultural Systems Management Capstone Project

## Data and Information Systems Concentration Courses (27 credits)

- AGECE 33000 - Management Methods For Agricultural Business
- ASM 54000 - Geographic Information System Application
- CNIT 15501 - Introduction To Software Development Concepts
- CNIT 18000 - Introduction To Systems Development
- CNIT 25501 - Object-Oriented Programming Introduction
- **CNIT Selective** - Credit Hours: 3.00
- AGR 33300 - Data Science For Agriculture
- CNIT 27200 - Database Fundamentals
- CNIT 28000 - Systems Analysis And Design Methods

- CNIT 31500 - Systems Programming
- CNIT 32500 - Object-Oriented Application Development
- CNIT 35500 - Software Development For Mobile Computers
- ASM Major Selective (any ASM course) - Credit Hours: 9.00

## Other Departmental/Program Course Requirements (67-70 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11100 - Introduction To Agricultural And Biological Engineering Academic Programs
- AGECEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- ECON 25100 - Microeconomics (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECEC 33100 - Principles Of Industrial Selling
- AGECEC 35200 - Quantitative Techniques For Firm Decision Making
- AGECEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- AGRY 25500 - Soil Science
- CHM 11100 - General Chemistry (satisfies Science #1 for core)
- CHM 11200 - General Chemistry (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- PHYS 21400 - The Nature Of Physics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- **Marketing Selective** - Credit Hours: 3.00
- AGECEC 22000 - Economics Of Agricultural Markets
- AGECEC 32100 - Principles Of Commodity Marketing
- AGECEC 32700 - Principles Of Food And Agribusiness Marketing
- Biological Science Selective - Credit Hours: 4.00
- Biological Science Selective - Credit Hours: 4.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Science, Technology & Society Selective - Credit Hours: 1.00-3.00 (satisfies Science, Technology & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Supplemental Information

Selective Courses: Agricultural Systems Management Supplemental Information

## Electives (1-4 credits)

- Electives - Credit Hours: 1.00-4.00

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

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Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

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## Upper Level Requirement

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- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11100 - Introduction To Agricultural And Biological Engineering Academic Programs
- ASM 10400 - Introduction To Agricultural Systems
- CHM 11100 - General Chemistry
- MA 16010 - Applied Calculus I
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- ECON 25100 - Microeconomics
- Oral Communication Selective - Credit Hours: 3.00

16 Credits

### Spring 1st Year

- ASM 10500 - Computing Technology With Applications
- CHM 11200 - General Chemistry
- PHYS 21400 - The Nature Of Physics
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

## 15-16 Credits

### Fall 2nd Year

- ASM 21100 - Technical Graphic Communications
- ASM 22100 - Career Opportunities Seminar
- ASM 22200 - Crop Production Equipment
- CNIT 18000 - Introduction To Systems Development
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00

## 14 Credits

### Spring 2nd Year

- AGRY 25500 - Soil Science
- CNIT 15501 - Introduction To Software Development Concepts
- STAT 30100 - Elementary Statistical Methods
- ASM Major Selective (any ASM course) - Credit Hours: 3.00
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00

## 16 Credits

### Fall 3rd Year

- AGECE 33100 - Principles Of Industrial Selling
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- ASM Major Selective (any ASM course) - Credit Hours: 3.00
- **Marketing Selective** - Credit Hours: 3.00
- AGECE 22000 - Economics Of Agricultural Markets or
- AGECE 32100 - Principles Of Commodity Marketing or
- AGECE 32700 - Principles Of Food And Agribusiness Marketing

## 15 Credits

### Spring 3rd Year

- AGECE 33000 - Management Methods For Agricultural Business



- ASM 33300 - Facilities Planning And Management
- ASM 35000 - Safety In Agriculture
- CNIT 25501 - Object-Oriented Programming Introduction
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Fall 4th Year

- ASM 42100 - Senior Seminar
- ASM 49400 - Project Planning And Management
- ASM 54000 - Geographic Information System Application
- AGECE 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I  
CNIT Selective - Credit Hours: 3.00
- CNIT 27200 - Database Fundamentals or
- CNIT 28000 - Systems Analysis And Design Methods or
- CNIT 31500 - Systems Programming or
- CNIT 32500 - Object-Oriented Application Development or
- CNIT 35500 - Software Development For Mobile Computers
- Science, Technology & Society Selective - Credit Hours: 1.00-3.00

## 12-14 Credits

### Spring 4th Year

- ASM 49500 - Agricultural Systems Management Capstone Project
- ASM Major Selective (any ASM course) - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-4.00

## 14-16 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# Agricultural Systems Management: Leadership and Management, BS

## About the Program

The Leadership & Management concentration more adequately prepares graduates for supervision and leadership in the technology arena of agribusiness. The 4 Organizational Leadership and Supervision (or Technology Leadership and Innovation) courses lead to the Organizational and Leadership Supervision minor for added credentials in this area. Students will still also get the Food and Agribusiness Management Minor.&nbsp;

Agricultural Systems Management (ASM) prepares individuals to organize and manage environmentally sound, technology-based businesses. The program's emphasis is on planning and directing an industry or business project with responsibility for results. ASM is based on an understanding of how equipment and buildings are used with plants and animals and their products. These processes require an understanding of the biological sciences to produce and maintain top product quality.

Computer skills are taught and used throughout the curriculum. Computers are used to collect and analyze data, and then using that information, to control machines and processes. Other uses involve planning layouts of equipment and buildings, creating graphics for reports, etc.

Agricultural Systems Management students also take several of courses in communications, business management and agricultural sciences, in addition to their specialty courses based in the Agricultural and Biological Engineering Department. The program provides an in-depth technical knowledge for selecting and applying advanced technologies in the food, feed, fiber, and fuel system. Graduates are prepared to solve a wide variety of business and technical problems in a job field that continues to grow.

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:&nbsp;**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers

- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

Agricultural Systems Management Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (49 credits)

### Required Major Courses (22 credits)

- ASM 10400 - Introduction To Agricultural Systems
- ASM 10500 - Computing Technology With Applications
- ASM 21100 - Technical Graphic Communications
- ASM 22100 - Career Opportunities Seminar
- ASM 22200 - Crop Production Equipment
- ASM 33300 - Facilities Planning And Management
- ASM 35000 - Safety In Agriculture
- ASM 42100 - Senior Seminar
- ASM 49400 - Project Planning And Management
- ASM 49500 - Agricultural Systems Management Capstone Project

### Leadership and Management Concentration Courses (27 credits)

- AGECE 33000 - Management Methods For Agricultural Business
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership
- Leadership and Management Selective - Credit Hours 6.00
- ASM Major Selective (any ASM course) - Credit Hours: 9.00
- ASM Selective (any ASM course 40000+ level) - Credit Hours: 3.00

### Other Departmental/Program Course Requirements (67-70 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11100 - Introduction To Agricultural And Biological Engineering Academic Programs
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Science (BSS) for core) or
- ECON 25100 - Microeconomics (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 33100 - Principles Of Industrial Selling
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 45500 - Agricultural Law or

- MGMT 45500 - Legal Background For Business I
- AGRY 25500 - Soil Science
- CHM 11100 - General Chemistry (satisfies Science #1 requirement for core)
- CHM 11200 - General Chemistry (satisfies Science #2 requirement for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- PHYS 21400 - The Nature Of Physics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- Marketing Selective - Credit Hours: 3.00
- AGECE 22000 - Economics Of Agricultural Markets
- AGECE 32100 - Principles Of Commodity Marketing
- AGECE 32700 - Principles Of Food And Agribusiness Marketing
- Biological Science Selective - Credit Hours: 4.00
- Biological Science Selective - Credit Hours: 4.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Science, Technology & Society Selective - Credit Hours: 1.00-3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (1-4 credits)

- Electives - Credit Hours: 1.00-4.00

## Supplemental List

Agricultural Systems Management Supplemental Information

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

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### Civics Literacy Proficiency Requirement

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## Upper Level Requirement

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- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11100 - Introduction To Agricultural And Biological Engineering Academic Programs
- ASM 10400 - Introduction To Agricultural Systems
- CHM 11100 - General Chemistry
- MA 16010 - Applied Calculus I
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- ECON 25100 - Microeconomics
- Oral Communication Selective - Credit Hours: 3.00

16 Credits

### Spring 1st Year

- ASM 10500 - Computing Technology With Applications
- CHM 11200 - General Chemistry
- PHYS 21400 - The Nature Of Physics
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

15-16 Credits

### Fall 2nd Year

- ASM 21100 - Technical Graphic Communications
- ASM 22100 - Career Opportunities Seminar
- ASM 22200 - Crop Production Equipment

- STAT 30100 - Elementary Statistical Methods
- College of Agriculture Biological Science Selective - Credit Hours: 4.00

## 14 Credits

### Spring 2nd Year

- AGEC 33000 - Management Methods For Agricultural Business
- AGRY 25500 - Soil Science
- ASM 33300 - Facilities Planning And Management
- ASM Selective (any ASM course) - Credit Hours: 3.00
- College of Agriculture Biological Science Selective - Credit Hours: 4.00

## 16 Credits

### Fall 3rd Year

- AGEC 33100 - Principles Of Industrial Selling  
Marketing Selective - Credit Hours: 3.00
- AGEC 22000 - Economics Of Agricultural Markets or
- AGEC 32100 - Principles Of Commodity Marketing or
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- ASM Selective (any ASM course) - Credit Hours: 3.00
- Science, Technology & Society Selective - Credit Hours: 1.00-3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 13-15 Credits

### Spring 3rd Year

- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- ASM 35000 - Safety In Agriculture
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- TLI 11200 - Foundations Of Organizational Leadership
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 16 Credits

### Fall 4th Year

- ASM 42100 - Senior Seminar
- ASM 49400 - Project Planning And Management
- TLI 15200 - Business Principles For Organizational Leadership

- AGEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- Leadership and Management Selective - Credit Hours: 3.00

## 14 Credits

### Spring 4th Year

- ASM 49500 - Agricultural Systems Management Capstone Project
- ASM Selective (any ASM course 40000+ level) - Credit Hours: 3.00
- Leadership and Management Selective - Credit Hours 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-4.00

## 13-16 Credits

### Pre-Requisite Information

For pre-requisite information, [click here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

### Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Biological Engineering, BSBE**



## About the Program

The world has tremendous need for solutions to problems related to the environment, energy, health, food, and sustainability. Biological systems are related to or at the heart of all of these issues. A biological engineer learns to design and analyze biological systems to develop innovative and practical solutions. Our B.S. graduates are well prepared for careers in the food industry, pharmaceutical industry, biotechnology, and bioprocessing as well as entrance into graduate or medical school. Students may select a major and plan of study within biological engineering that is tailored to their specific career goals. Students in this program earn a Bachelor of Science in Biological Engineering, (BSBE). Some areas of focus include:

**BioEnvironmental Engineering:** Bioprocessing manufacturers, including food and pharmaceutical industries are looking for innovative environmental controls, waste processing, and water treatment to meet corporate sustainability goals and to comply with increasingly strict governmental regulations. The engineering rules-of-thumb and design heuristics based on past practices that have been the standard in municipal wastewater treatment design are less applicable to treating the highly variable waste stream characteristics of specialized industries. In addition, there exists a high potential for identifying value added products from these water streams.

**Cellular and Biomolecular Engineering:** This emerging field is expected to rapidly advance and open opportunities in biomanufacturing, drug design, human therapeutics, tissue and organ regeneration, bioenergy and biofuel production, bioremediation, and biodefense.

**Food & Biological Process Engineering:** This is an interdisciplinary field that applies the basic sciences, mathematics, and engineering to convert agricultural commodities into edible foods and biological materials through various processing steps. Advances in genetic engineering lead to new types of crops and new processing methods to create value added products.

**Pharmaceutical Process Engineering:** This program of study is targeted to provide graduates with unique skills and job opportunities to take on roles within all phases of the pharmaceutical industry including research, product and process development, processing engineering, manufacturing, and marketing.

### **Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

The Biological Engineering program is accredited by the Engineering Accreditation Commission of ABET.

Biological Engineering Major Change (CODO) Requirements

## Degree Requirements

# 129 Credits Required

## Departmental/Program Major Courses (59 credits)

### Required Major Courses (59 credits)

- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 20200 - Thermodynamics In Biological Systems II
- ABE 29000 - Sophomore Seminar (satisfies Science, Technology, & Society for core)
- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30700 - Momentum Transfer In Food And Biological Systems
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- ABE 45700 - Transport Operations In Food And Biological Engineering I
- ABE 46000 - Sensors And Process Control
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II
- ABE 55800 - Process Design For Food And Biological Systems
- Biological Engineering Selective - Credit Hours: 6.00
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00
- Biological Engineering or Life Science Selective - Credit Hours: 3.00
  
- Life Science Selective - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (69-73 credits)

### Other Departmental Requirements (69-72 credits)

[Click here for First-Year Engineering Requirements](#)

[Click here for Pre-Agricultural and Biological Engineering Requirements](#)

- ENGR 13100 - Transforming Ideas To Innovation I (satisfies Information Literacy for core)
- ENGR 13200 - Transforming Ideas To Innovation II
- CHM 11500 - General Chemistry (satisfies Science #1 for core)
- CHM 11600 - General Chemistry (satisfies Science #2 for core)
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16100 - Plane Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core)
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II
- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)

- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- CHE 32000 - Statistical Modeling And Quality Enhancement ♦
- CHM 25700 - Organic Chemistry ♦  
OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦
- MA 26100 - Multivariate Calculus
- MA 26200 - Linear Algebra And Differential Equations
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences
- Economics Selective - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy
- AGEC 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (0-1 credits)

- Electives - Credit Hours: 0.00-1.00

## Supplemental Information

[Click here for Biological Engineering Supplemental Information](#)

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- Students must have a graduation index of 2.0

## Transfer Credit Policy

- Transfer courses listed in the Purdue Transfer Equivalency Guide with specific Purdue Subject codes (e. g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer credit courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- CHM 11500 - General Chemistry
- ENGR 13100 - Transforming Ideas To Innovation I
- MA 16500 - Analytic Geometry And Calculus I or
- MA 16100 - Plane Analytic Geometry And Calculus I
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 16-18 Credits

### Spring 1st Year

- CHM 11600 - General Chemistry
- ENGR 13200 - Transforming Ideas To Innovation II
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II
- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00

### 17-18 Credits

### Fall 2nd Year

- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 29000 - Sophomore Seminar

- MA 26100 - Multivariate Calculus
- CHM 25700 - Organic Chemistry ♦
- OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00

## 17 Credits

### Spring 2nd Year

- ABE 20200 - Thermodynamics In Biological Systems II
- CHE 32000 - Statistical Modeling And Quality Enhancement
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 26200 - Linear Algebra And Differential Equations ♦
- Life Sciences Selective - Credit Hours: 3.00

## 16-17 Credits

### Fall 3rd Year

- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30700 - Momentum Transfer In Food And Biological Systems
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00

## 16 Credits

### Spring 3rd Year

- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems
- ABE 45700 - Transport Operations In Food And Biological Engineering I
- Economics Selective - Credit Hours: 3.00
- AGECEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECEC 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics

## 15 Credits

### Fall 4th Year

- ABE 46000 - Sensors And Process Control
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II
- Biological Engineering Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Spring 4th Year

- ABE 55800 - Process Design For Food And Biological Systems
- Biological Engineering Selective - Credit Hours: 3.00
- Biological Engineering or Life Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-1.00

## 15-16 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Biological Engineering: BioEnvironmental Engineering Concentration, BSBE**

### About the Program

This Biological Engineering Concentration prepares students to work with bioprocessing manufacturers, including food and pharmaceutical industries, look for innovative environmental controls, waste processing, and water treatment to meet corporate sustainability goals and to comply with increasingly strict governmental regulations. The engineering rules-of-thumb and design heuristics based on past practices that have been the standard in municipal wastewater treatment design are less applicable to treating the highly variable waste stream characteristics of specialized industries. In addition, there exists a high potential for identifying value added products from these water streams.

The world has tremendous need for solutions to problems related to the environment, energy, health, food, and sustainability. Biological systems are related to or at the heart of all of these issues. A biological engineer learns to design and analyze biological systems to develop innovative and practical solutions. Our B.S. graduates are well prepared for careers in the food industry, pharmaceutical industry, biotechnology, and bioprocessing as well as entrance into graduate or medical school. Students may select a major and plan of study within biological engineering that is tailored to their specific career goals. Students in this program earn a Bachelor of Science in Biological Engineering, (BSBE).

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program: &nbsp;**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

The Biological Engineering program is accredited by the Engineering Accreditation Commission of ABET.

Biological Engineering Major Change (CODO) Requirements

### Degree Requirements

## **129 Credits Required**



## Departmental/Program Major Courses (60 credits)

### Required Major Courses (39 credits)

- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 20200 - Thermodynamics In Biological Systems II
- ABE 29000 - Sophomore Seminar (satisfies Science, Technology, and Society for core)
- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30700 - Momentum Transfer In Food And Biological Systems
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- ABE 45700 - Transport Operations In Food And Biological Engineering I
- ABE 46000 - Sensors And Process Control
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II
- ABE 55800 - Process Design For Food And Biological Systems

### BioEnvironmental Engineering Concentration Courses (21 credits)

- ABE 32500 - Soil And Water Resource Engineering
- BioEnvironmental Selective - Credit Hours: 6.00 (see Supplemental Information)
- AGRY 25500 - Soil Science ♦
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00 (see Supplemental Information)
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00 (see Supplemental Information)

## Other Departmental/Program Course Requirements (69-73 credits)

### First-Year Engineering Requirements (29-39 credits)

[Click here for First-Year Engineering requirements.](#)

- Requirement #1 - Intro to Engineering I (2-4 credits)
- Requirement #2 - Intro to Engineering II (2-4 credits)
- Requirement #3 - Calculus I (4-5 credits) (*satisfies Quantitative Reasoning for core*)
- Requirement #4 - Calculus II (4-5 credits) (*satisfies Quantitative Reasoning for core*)
- Requirement #5 - Chemistry I (4-6 credits) (*satisfies Science #1 for core*)
- Requirement #6 - Physics (4 credits) (*satisfies Science #2 for core*)
- Requirement #7 - First-Year Engineering Selective (3-4 credits)
- Requirement #8 - Written and Oral Communication (6-7 credits) (*could satisfy Written Communication, Information Literacy or Oral Communication for core*)

[Click here for Pre-Agricultural and Biological Engineering Requirements.](#)

### Other Departmental Requirements (36 credits)

*See First-Year Engineering for all course requirements.*

- CHE 32000 - Statistical Modeling And Quality Enhancement ♦
- CHM 25700 - Organic Chemistry ♦  
OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦
- MA 26100 - Multivariate Calculus
- MA 26200 - Linear Algebra And Differential Equations
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences  
Economics Selective - Credit Hours: 3.00 (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (0-4 credit)

- Electives - Credit Hours: 0.00-4.00

## Supplemental Information

[Click here for Biological Engineering Supplemental Information .](#)

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- Students must have a graduation index of 2.0

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- **Transfer courses listed in the Purdue Transfer Equivalency Guide with specific Purdue Subject codes (e. g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer credit courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture.**

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency website.

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## First-Year Engineering Program Requirements

### First-Year Engineering Program Requirements - Main Option

#### Fall 1st Year

- **FYE Requirement #1** ♦ - Credit Hours: 2.00
- ENGR 13100 - Transforming Ideas To Innovation I
- **FYE Requirement #3** ♦ - Credit Hours: 4.00-5.00
- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- **FYE Requirement #5** ♦ - Credit Hours: 4.00
- **FYE Requirement #8** ♦ - Credit Hours: 3.00-4.00
  - Written Communication Selective (satisfies Written Communication for core) or
  - Oral Communication Selective (satisfies Oral Communication for core)
- CHM 11500 - General Chemistry

#### 13-15 Credits

#### Spring 1st Year

- **FYE Requirement #2** ♦ - Credit Hours: 2.00
- ENGR 13200 - Transforming Ideas To Innovation II
- **FYE Requirement #6** ♦ - Credit Hours: 4.00
- PHYS 17200 - Modern Mechanics

- **FYE Requirement #4** ♦ - Credit Hours: 4.00-5.00
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- **FYE Requirement #8** ♦ - Credit Hours: 3.00-4.00
  - Written Communication Selective (satisfies Written Communication for core) or
  - Oral Communication Selective (satisfies Oral Communication for core)
- **FYE Requirement #7** ♦ - Credit Hours: 3.00-4.00 (FYE Selective)

## 16-19 Credits

For other FYE Options, click the link below:

- Other FYE Options for students in the EPICS or GOSS Scholars learning communities

## Sample 3-Year Plan

### Fall 2nd Year

- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 29000 - Sophomore Seminar
- MA 26100 - Multivariate Calculus
- CHM 25700 - Organic Chemistry ♦  
OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00

## 17 Credits

### Spring 2nd Year

- ABE 20200 - Thermodynamics In Biological Systems II
- AGRY 25500 - Soil Science
- CHE 32000 - Statistical Modeling And Quality Enhancement ♦
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 26200 - Linear Algebra And Differential Equations

## 16-17 Credits

### Fall 3rd Year

- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30700 - Momentum Transfer In Food And Biological Systems

- ABE 32500 - Soil And Water Resource Engineering
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences

## 16 Credits

### Spring 3rd Year

- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems
- ABE 45700 - Transport Operations In Food And Biological Engineering I  
Economics Selective - Credit Hours: 3.00
- BioEnvironmental Selective - Credit Hours: 3.00
- AGECEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECEC 20400 - Introduction To Resource Economics And Environmental Policy
- AGECEC 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics

## 18 Credits

### Fall 4th Year

- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II
- College of Agriculture: Biological Science Selective - Credit Hours: 4.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 14 Credits

### Spring 4th Year

- ABE 46000 - Sensors And Process Control
- ABE 55800 - Process Design For Food And Biological Systems BioEnvironmental Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-4.00

## 15-19 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Biological Engineering: Cellular and Biomolecular Engineering Concentration, BSBE

### About the Program

This Biological Engineering Concentration leads to rapidly advancing and open opportunities in biomanufacturing, drug design, human therapeutics, tissue and organ regeneration, bioenergy and biofuel production, bioremediation, and biodefense.

The world has tremendous need for solutions to problems related to the environment, energy, health, food, and sustainability. Biological systems are related to or at the heart of all of these issues. A biological engineer learns to design and analyze biological systems to develop innovative and practical solutions. Our B.S. graduates are well prepared for careers in the food industry, pharmaceutical industry, biotechnology, and bioprocessing as well as entrance into graduate or medical school. Students may select a major and plan of study within biological engineering that is tailored to their specific career goals. Students in this program earn a Bachelor of Science in Biological Engineering, (BSBE).

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:&nbsp;**

- Multiple opportunities for interaction with faculty in laboratories and in classes

- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

The Biological Engineering program is accredited by the Engineering Accreditation Commission of ABET.

Biological Engineering Major Change (CODO) Requirements

## Degree Requirements

# 129 Credits Required

## Departmental/Program Major Courses (59 credits)

### Required Major Courses (39 credits)

- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 20200 - Thermodynamics In Biological Systems II
- ABE 29000 - Sophomore Seminar (satisfies Science, Technology, & Society for core)
- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30700 - Momentum Transfer In Food And Biological Systems
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- ABE 45700 - Transport Operations In Food And Biological Engineering I
- ABE 46000 - Sensors And Process Control
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II
- ABE 55800 - Process Design For Food And Biological Systems

### Cellular and Biomolecular Engineering Concentration Courses (20 credits)

- ABE 22600 - Biotechnology Laboratory I ♦ (fulfills College of Agriculture: Biological Sciences Selective)
- ABE 22700 - Biotechnology Laboratory II ♦ (fulfills College of Agriculture: Biological Sciences Selective)



- ABE 44000 - Cell And Molecular Design Principles (fulfills College of Agriculture: Biological Sciences Selective)
- ABE 58000 - Process Engineering Of Renewable Resources
- BIOL 23000 - Biology Of The Living Cell ♦ (fulfills College of Agriculture: Biological Sciences Selective)
- Cellular and Biomolecular Engineering Concentration Science Selective - Credit Hours: 4.00
- Cellular and Biomolecular Engineering Concentration Science Selective - Credit Hours: 3.00  
(see Supplemental Information)

## Other Departmental/Program Course Requirements (69-72 credits)

### First-Year Engineering Requirements

[Click here for First-Year Engineering requirements.](#)

- Requirement #1 - Intro to Engineering I (2-4 credits)
- Requirement #2 - Intro to Engineering II (2-4 credits)
- Requirement #3 - Calculus I (4-5 credits) (satisfies *Quantitative Reasoning for core*)
- Requirement #4 - Calculus II (4-5 credits) (satisfies *Quantitative Reasoning for core*)
- Requirement #5 - Chemistry I (4-6 credits) (satisfies *Science #1 for core*)
- Requirement #6 - Physics (4 credits) (satisfies *Science #2 for core*)
- Requirement #7 - First-Year Engineering Selective (3-4 credits)
- Requirement #8 - Written and Oral Communication (6-7 credits) (could satisfy *Written Communication, Information Literacy or Oral Communication for core*)

[Click here for Pre-Agricultural and Biological Engineering Requirements.](#)

### Other Departmental Requirements (69-72 credits)

- ENGR 13100 - Transforming Ideas To Innovation I (satisfies Information Literacy for core)
- ENGR 13200 - Transforming Ideas To Innovation II
- CHM 11500 - General Chemistry (satisfies Science #1 for core)
- CHM 11600 - General Chemistry (satisfies Science #2 for core)
- CS 15900 - C Programming  
or
- CS 17700 - Programming With Multimedia Objects
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16600 - Analytic Geometry And Calculus II  
or
- MA 16200 - Plane Analytic Geometry And Calculus II (satisfies Quantitative Reasoning for core)
- CHE 32000 - Statistical Modeling And Quality Enhancement ♦
- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00 (satisfies Written Communication for core)
- CHM 25700 - Organic Chemistry ♦  
OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦
- MA 26100 - Multivariate Calculus

- MA 26200 - Linear Algebra And Differential Equations
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences  
Economics Selective - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Elective (0-1 credit)

- Electives - Credit Hours: 0.00-1.00

## Supplemental Information

[Click here for Biological Engineering Supplemental Information](#)

## Grade Requirements

- *Clearly list any/all grade requirements within the program.*

## GPA Requirements

- Students must have a graduation index of 2.0

## Course Requirements and Notes

- *Double-counting policy - where is it allowed and not allowed; specific notes or requirements about courses; repeatable limits, study abroad, etc.*

## Non-course / Non-credit Requirements

- *Degree requirements which are not associated to a course. For example: portfolio, work experience, certifications. Should equal 0 credits.*

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)

- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency website.

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- CHM 11500 - General Chemistry
- ENGR 13100 - Transforming Ideas To Innovation I
- MA 16500 - Analytic Geometry And Calculus I or
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- MA 16100 - Plane Analytic Geometry And Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

### 16-18 Credits

### Spring 1st Year

- CHM 11600 - General Chemistry
- ENGR 13200 - Transforming Ideas To Innovation II
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II  
after

- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00

## 17-18 Credits

### Fall 2nd Year

- ABE 20100 - Thermodynamics In Biological Systems I ♦
- ABE 22600 - Biotechnology Laboratory I ♦
- ABE 29000 - Sophomore Seminar
- BIOL 23000 - Biology Of The Living Cell
- MA 26100 - Multivariate Calculus
- CHM 25700 - Organic Chemistry ♦  
OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦

## 18 Credits

### Spring 2nd Year

- ABE 20200 - Thermodynamics In Biological Systems II
- ABE 22700 - Biotechnology Laboratory II ♦
- CHE 32000 - Statistical Modeling And Quality Enhancement ♦
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 26200 - Linear Algebra And Differential Equations

## 15-16 Credits

### Fall 3rd Year

- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30700 - Momentum Transfer In Food And Biological Systems
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences
- Cellular and Biomolecular Engineering Concentration: Science Selective - Credit Hours: 4.00

## 16 Credits

### Spring 3rd Year

- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems

- ABE 45700 - Transport Operations In Food And Biological Engineering I  
Economics Selective - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics

## 15 Credits

### Fall 4th Year

- ABE 46000 - Sensors And Process Control
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II
- Cellular and Biomolecular Engineering Concentration: Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Spring 4th Year

- ABE 44000 - Cell And Molecular Design Principles
- ABE 55800 - Process Design For Food And Biological Systems
- ABE 58000 - Process Engineering Of Renewable Resources
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-1.00

## 15-16 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# Biological Engineering: Food and Biological Process Engineering Concentration, BSBE

## About the Program

This Biological Engineering Concentration is an interdisciplinary field that applies the basic sciences, mathematics, and engineering to convert agricultural commodities into edible foods and biological materials through various processing steps. Advances in genetic engineering lead to new types of crops and new processing methods to create value added products.

The world has tremendous need for solutions to problems related to the environment, energy, health, food, and sustainability. Biological systems are related to or at the heart of all of these issues. A biological engineer learns to design and analyze biological systems to develop innovative and practical solutions. Our B.S. graduates are well prepared for careers in the food industry, pharmaceutical industry, biotechnology, and bioprocessing as well as entrance into graduate or medical school. Students may select a major and plan of study within biological engineering that is tailored to their specific career goals. Students in this program earn a Bachelor of Science in Engineering in Biological Engineering, (BSE-BE).

### **Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

The Biological Engineering program is accredited by the Engineering Accreditation Commission of ABET.

Biological Engineering Major Change (CODO) Requirements

## Degree Requirements

# 129 Credits Required

## Departmental/Program Major Courses (59 credits)

### Required Major Courses (39 credits)

- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 20200 - Thermodynamics In Biological Systems II
- ABE 29000 - Sophomore Seminar (satisfies Science, Technology, and Society for core)
- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30700 - Momentum Transfer In Food And Biological Systems
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- ABE 45700 - Transport Operations In Food And Biological Engineering I
- ABE 46000 - Sensors And Process Control
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II
- ABE 55800 - Process Design For Food And Biological Systems

### Food and Biological Process Engineering Concentration Courses (20 credits)

- ABE 31400 - Design Of Electronic Systems
- ABE 58000 - Process Engineering Of Renewable Resources
- BIOL 11000 - Fundamentals Of Biology I ♦ (fulfills College of Agriculture Biological Sciences requirement)
- BIOL 22100 - Introduction To Microbiology ♦ (fulfills College of Agriculture Biological Sciences requirement)
- NUTR 20500 - Food Science I ♦ or
- BCHM 30700 - Biochemistry ♦
- Food and Biological Process Engineering Biological or Food Science Selective - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (69-72 credits)

### First-Year Engineering Requirements

[Click here for First-Year Engineering requirements.](#)

- Requirement #1 - Intro to Engineering I (2-4 credits)
- Requirement #2 - Intro to Engineering II (2-4 credits)
- Requirement #3 - Calculus I (4-5 credits) (*satisfies Quantitative Reasoning for core*)



- Requirement #4 - Calculus II (4-5 credits) (*satisfies Quantitative Reasoning for core*)
- Requirement #5 - Chemistry I (4-6 credits) (*satisfies Science #1 for core*)
- Requirement #6 - Physics (4 credits) (*satisfies Science #2 for core*)
- Requirement #7 - First-Year Engineering Selective (3-4 credits)
- Requirement #8 - Written and Oral Communication (6-7 credits) (*could satisfy Written Communication, Information Literacy or Oral Communication for core*)

Click here for Pre-Agricultural and Biological Engineering Requirements.

## Other Departmental Requirements (69-72 credits)

- ENGR 13100 - Transforming Ideas To Innovation I (satisfies Information Literacy for core)
- ENGR 13200 - Transforming Ideas To Innovation II
- CHM 11500 - General Chemistry (satisfies Science #1 for core)
- CHM 11600 - General Chemistry (satisfies Science #2 for core)
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16100 - Plane Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core)
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II
- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- CHE 32000 - Statistical Modeling And Quality Enhancement ♦
- CHM 25700 - Organic Chemistry ♦  
OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦
- MA 26100 - Multivariate Calculus
- MA 26200 - Linear Algebra And Differential Equations
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Elective (0-1 credit)

- Electives - Credit Hours: 0.00-1.00

## Supplemental List

[Click here for Biological Engineering Supplemental Information](#)

## Grade Requirements

- *Clearly list any/all grade requirements within the program.*

## GPA Requirements

- Students must have a graduation index of 2.0

## Course Requirements and Notes

- *Double-counting policy - where is it allowed and not allowed; specific notes or requirements about courses; repeatable limits, study abroad, etc.*

## Non-course / Non-credit Requirements

- *Degree requirements which are not associated to a course. For example: portfolio, work experience, certifications. Should equal 0 credits.*

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00

- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- CHM 11500 - General Chemistry
- ENGR 13100 - Transforming Ideas To Innovation I
- MA 16500 - Analytic Geometry And Calculus I or
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- MA 16100 - Plane Analytic Geometry And Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

### 16-18 Credits

### Spring 1st Year

- CHM 11600 - General Chemistry
- ENGR 13200 - Transforming Ideas To Innovation II
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II
- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00

### 17-18 Credits

### Fall 2nd Year

- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 29000 - Sophomore Seminar
- BIOL 11000 - Fundamentals Of Biology I ♦
- MA 26100 - Multivariate Calculus
- CHM 25700 - Organic Chemistry ♦  
OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦

### 17 Credits

## Spring 2nd Year

- ABE 20200 - Thermodynamics In Biological Systems II
- BIOL 22100 - Introduction To Microbiology ♦
- CHE 32000 - Statistical Modeling And Quality Enhancement ♦
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 26200 - Linear Algebra And Differential Equations

17-18 Credits

## Fall 3rd Year

- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30700 - Momentum Transfer In Food And Biological Systems
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- BCHM 30700 - Biochemistry or
- NUTR 20500 - Food Science I
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences

15 Credits

## Spring 3rd Year

- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems
- ABE 31400 - Design Of Electronic Systems
- ABE 45700 - Transport Operations In Food And Biological Engineering I

15 Credits

## Fall 4th Year

- ABE 46000 - Sensors And Process Control
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II  
Economics Selective - Credit Hours: 3.00
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy
- AGEC 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Humanities or Social Science Selective - Credit Hours: 3.00

- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Spring 4th Year

- ABE 55800 - Process Design For Food And Biological Systems
- Humanities or Social Science Selective - Credit Hours: 3.00
- ABE 58000 - Process Engineering Of Renewable Resources
- Biological or Food Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-1.00

## 15-16 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Biological Engineering: Pharmaceutical Process Engineering Concentration, BSBE**

## About the Program

This Biological Engineering Concentration is targeted to provide graduates with unique skills and job opportunities to take on roles within all phases of the pharmaceutical industry including research, product and process development, processing engineering, manufacturing, and marketing.

The world has tremendous need for solutions to problems related to the environment, energy, health, food, and sustainability. Biological systems are related to or at the heart of all of these issues. A biological engineer learns to design and analyze biological systems to develop innovative and practical solutions. Our B.S. graduates are well prepared for careers in the food industry, pharmaceutical industry, biotechnology, and bioprocessing as well as entrance into graduate or medical school. Students may select a major and plan of study within biological engineering that is tailored to their specific career goals. Students in this program earn a Bachelor of Science in Engineering in Biological Engineering, (BSE-BE).

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

The Biological Engineering program is accredited by the Engineering Accreditation Commission of ABET.

Biological Engineering Major Change (CODO) Requirements

## Degree Requirements

### **129 Credits Required**

#### Departmental/Program Major Courses (60 credits)

#### Required Major Courses (39 credits)

- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 20200 - Thermodynamics In Biological Systems II
- ABE 29000 - Sophomore Seminar (satisfies Science, Technology, & Society for core)
- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30700 - Momentum Transfer In Food And Biological Systems
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering

- ABE 45700 - Transport Operations In Food And Biological Engineering I
- ABE 46000 - Sensors And Process Control
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II
- ABE 55800 - Process Design For Food And Biological Systems

## Pharmaceutical Process Engineering Concentration Courses (21 credits)

- ABE 31400 - Design Of Electronic Systems
- ABE 58000 - Process Engineering Of Renewable Resources
- BCHM 30700 - Biochemistry ♦
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 22100 - Introduction To Microbiology ♦
- IPPH 56200 - Introduction To Pharmaceutical Manufacturing Processes

## Other Departmental/Program Requirements (69-73 credits)

### First-Year Engineering Requirements

[Click here for First-Year Engineering requirements.](#)

- Requirement #1 - Intro to Engineering I (2-4 credits)
- Requirement #2 - Intro to Engineering II (2-4 credits)
- Requirement #3 - Calculus I (4-5 credits) (*satisfies Quantitative Reasoning for core*)
- Requirement #4 - Calculus II (4-5 credits) (*satisfies Quantitative Reasoning for core*)
- Requirement #5 - Chemistry I (4-6 credits) (*satisfies Science #1 for core*)
- Requirement #6 - Physics (4 credits) (*satisfies Science #2 for core*)
- Requirement #7 - First-Year Engineering Selective (3-4 credits)
- Requirement #8 - Written and Oral Communication (6-7 credits) (*could satisfy Written Communication, Information Literacy or Oral Communication for core*)

[Click here for Pre-Agricultural and Biological Engineering Requirements.](#)

## Other Departmental Requirements (69-73 credits)

- ENGR 13100 - Transforming Ideas To Innovation I (*satisfies Information Literacy for core*)
- ENGR 13200 - Transforming Ideas To Innovation II
- CHM 11500 - General Chemistry (*satisfies Science #1 for core*)
- CHM 11600 - General Chemistry (*satisfies Science #2 for core*)
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 16500 - Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*) or
- MA 16100 - Plane Analytic Geometry And Calculus I (*satisfies Quantitative Reasoning for core*)
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II
- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00 (*satisfies Oral Communication for core*)
- Written Communication Selective - Credit Hours: 3.00 (*satisfies Written Communication for core*)



- CHE 32000 - Statistical Modeling And Quality Enhancement ♦
- CHM 25700 - Organic Chemistry ♦  
OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦
- MA 26100 - Multivariate Calculus
- MA 26200 - Linear Algebra And Differential Equations
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (0-1 credits)

↵

- Elective - Credit Hours: 0.00-1.00

## Grade Requirements

- *Clearly list any/all grade requirements within the program.*

## GPA Requirements

- Students must have a graduation index of 2.0

## Course Requirements and Notes

- *Double-counting policy - where is it allowed and not allowed; specific notes or requirements about courses; repeatable limits, study abroad, etc.*

## Non-course / Non-credit Requirements

- *Degree requirements which are not associated to a course. For example: portfolio, work experience, certifications. Should equal 0 credits.*

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- CHM 11500 - General Chemistry
- ENGR 13100 - Transforming Ideas To Innovation I
- MA 16500 - Analytic Geometry And Calculus I or
- MA 16100 - Plane Analytic Geometry And Calculus I
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 16-18 Credits

### Spring 1st Year

- CHM 11600 - General Chemistry

- ENGR 13200 - Transforming Ideas To Innovation II
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II
- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00

## 17-18 Credits

### Fall 2nd Year

- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 29000 - Sophomore Seminar
- BIOL 11000 - Fundamentals Of Biology I ♦
- MA 26100 - Multivariate Calculus ♦
- CHM 25700 - Organic Chemistry ♦  
OR
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦ and
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I ♦

## 17 Credits

### Spring 2nd Year

- ABE 20200 - Thermodynamics In Biological Systems II
- BCHM 30700 - Biochemistry ♦
- CHE 32000 - Statistical Modeling And Quality Enhancement ♦
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 26200 - Linear Algebra And Differential Equations

## 16-17 Credits

### Fall 3rd Year

- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30700 - Momentum Transfer In Food And Biological Systems
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- BIOL 22100 - Introduction To Microbiology ♦
- MA 30300 - Differential Equations And Partial Differential Equations For Engineering And The Sciences

## 16 Credits

### Spring 3rd Year

- ABE 30100 - Numerical And Computational Modeling In Biological Engineering

- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 30800 - Heat And Mass Transfer In Food And Biological Systems
- ABE 31400 - Design Of Electronic Systems
- ABE 45700 - Transport Operations In Food And Biological Engineering I  
Economics Selective - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics

## 18 Credits

### Fall 4th Year

- ABE 46000 - Sensors And Process Control
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- ABE 55700 - Transport Operations In Food And Biological Systems II
- Humanities or Social Science Selective - Credit Hours: 3.00
- IPPH 56200 - Introduction To Pharmaceutical Manufacturing Processes ♦
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 17 Credits

### Spring 4th Year

- ABE 55800 - Process Design For Food And Biological Systems
- ABE 58000 - Process Engineering Of Renewable Resources
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Electives - Credit Hours: 0.00-1.00

## 12-16 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# Environmental and Natural Resources Engineering, BSAGE

## About the Program

Environmental and Natural Resources Engineering prepares engineers to understand environmental and economic sustainability challenges. You learn about ecosystem processes (the water cycle, nutrient transformation processes, and biological systems), how human activities such as agriculture affect these complex systems, and how to design sustainable solutions. You will also gain the background in chemistry and biology necessary to understand the influences of contaminants on the environment. Basic engineering principles, as well as some of the newest technological approaches such as geographical information systems, finite element analysis, sensor design, hydrologic modeling, and soil and water remediation are applied to solve challenges related to soil and plant environments, surface and ground water quality, air quality, animal environments, and food safety.

### Environmental and Natural Resources Engineering Focus Areas

- **Water and Soil Conservation:** Ensuring adequate supplies of clean water through sustainable methods by integrating environmental processes into engineering design (examples include: rain gardens, constructed wetlands, water and sediment control structures, and stream restoration).
- **Sensor Technology for Environmental Monitoring:** Integration of sensors and control systems into machinery and control systems for environmental monitoring (examples include: Unmanned Aircraft Systems (UAS), and self-driving equipment monitoring soil and moisture conditions in real time).
- **Simulation and Forecasting of Environmental Processes:** Using numerical simulation models to predict changes to flood and drought frequency, stream flow, and water quality due to land use, land management and climate change.
- **Resource Management:** Animal waste treatment and management, drainage system design and water quality management and irrigation system design and water management.
- **Systems Approach for Environmental Resource Management:** Applying tools and techniques such as life cycle analysis and other modeling approaches to study systems level environmental impacts associated with resource management focused on establishing connections between natural systems and agricultural-based industries

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Watch a video and take a look at some senior projects. We hope to see you in ABE soon!

**Current Students - [Click here for advising and degree requirement resources.](#)**

**Prospective Students - [Click here to learn more and schedule a visit.](#)**

The Environmental and Natural Resources Engineering program is accredited by the Engineering Accreditation Commission of ABET.

Department of Agriculture and Biological Engineering

Environmental and Natural Resources Engineering Major Change (CODO) Requirements

## Degree Requirements

# 128 Credits Required

## Departmental/Program Major Courses (25 credits)

### Required Major Courses (25 credits)

- ABE 20500 - Computations For Engineering Systems
- ABE 21000 - Thermodynamics Principles Of Engineering And Biological Systems
- ABE 29000 - Sophomore Seminar (satisfies Science, Technology, and Society for core)
- ABE 30500 - Physical Properties Of Biological Materials
- ABE 31400 - Design Of Electronic Systems
- ABE 32500 - Soil And Water Resource Engineering
- ABE 42500 - Water Quality Engineering or
- ABE 42600 - Ecological Restoration Engineering
- ABE 48400 - Project Planning And Management
- ABE 48600 - Agricultural Engineering Design (Capstone)
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering

## Other Departmental/Program Requirements (101-105 credits)

### First-Year Engineering Requirements (29-39 credits)

[Click here for First-Year Engineering requirements.](#)

- Requirement #1 - Intro to Engineering I (2-4 credits)
- Requirement #2 - Intro to Engineering II (2-4 credits)
- Requirement #3 - Calculus I (4-5 credits) (*satisfies Quantitative Reasoning for core*)
- Requirement #4 - Calculus II (4-5 credits) (*satisfies Quantitative Reasoning for core*)
- Requirement #5 - Chemistry I (4-6 credits) (*satisfies Science #1 for core*)
- Requirement #6 - Physics (4 credits) (*satisfies Science #2 for core*)
- Requirement #7 - First-Year Engineering Selective (3-4 credits)
- Requirement #8 - Written and Oral Communication (6-7 credits) (*could satisfy Written Communication, Information Literacy or Oral Communication for core*)

## Other Departmental Courses (101-105 credits)

**First Year Engineering Course Options** - These courses are required for the Environmental & Natural Resource Engineering Major. They may be taken in First Year Engineering. If they are not taken then, they will need to be incorporated in the six (6) remaining semesters prior to graduation.

- CHM 11500 - General Chemistry ♦
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 16500 - Analytic Geometry And Calculus I or
- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II
- PHYS 17200 - Modern Mechanics
- Oral Communication Selective - Credit Hours: 3.00 (*satisfies Oral Communication for core*)
- Written Communication Selective - Credit Hours: 3.00-4.00 (*satisfies Written Communication for core*)
  
- AGRY 25500 - Soil Science ♦
- CE 38300 - Geotechnical Engineering I ♦
- CE 34000 - Hydraulics ♦ and
- CE 34300 - Elementary Hydraulics Laboratory ♦
- CHM 11600 - General Chemistry
- MA 26100 - Multivariate Calculus
- MA 26200 - Linear Algebra And Differential Equations
- ME 27000 - Basic Mechanics I ♦
- ME 27400 - Basic Mechanics II
- PHYS 24100 - Electricity And Optics ♦
- Economics Selective - Credit Hours: 3.00 (*satisfies Human Cultures: Behavioral/Social Science for core*)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Agricultural Selective - Credit Hours: 3.00
- College of Agriculture Biological Science Selective - Credit Hours: 4.00
- College of Agriculture Biological Science Selective - Credit Hours: 4.00
- Engineering Technical Selective - Credit Hours: 3.00
- Engineering Technical Selective - Credit Hours: 3.00



- Environmental and Natural Resources Engineering Technical Selective - Credit Hours: 3.00
- Environmental and Natural Resources Engineering Technical Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written and Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (0-2 credits)

- Electives - Credit Hours: 0.00-2.00

## Supplemental List

[Click here for Environmental and Natural Resources Engineering Supplemental Information](#)

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Sample First Year Engineering Plan of Study

#### Fall 1st Year

- CHM 11500 - General Chemistry (*FYE Requirement #8*) - Credit Hours: 4.00 or (CHM 11100 and CHM 11200)
- ENGR 13100 - Transforming Ideas To Innovation I ♦ (*FYE Requirement #1*) - Credit Hours: 2.00
- MA 16100 - Plane Analytic Geometry And Calculus I ♦ (*FYE Requirement #3*) - Credit Hours: 5.00 or
- MA 16500 - Analytic Geometry And Calculus I ♦ (*FYE Requirement #3*) - Credit Hours: 4.00
- Written Communication Selective (*FYE Requirement #8*) - Credit Hours: 3.00-4.00 (satisfies Written Communication for core) or
- Oral Communication Selective (*FYE Requirement #8*) - Credit Hours: 3.00 (satisfies Oral Communication for core)

#### 13-14 Credits

#### Spring 1st Year

- ENGR 13200 - Transforming Ideas To Innovation II ♦ (*FYE Requirement #2*) - Credit Hours: 2.00
- PHYS 17200 - Modern Mechanics (*FYE Requirement #6*) - Credit Hours: 4.00
- MA 16200 - Plane Analytic Geometry And Calculus II ♦ (*FYE Requirement #4*) - Credit Hours: 5.00 or
- MA 16600 - Analytic Geometry And Calculus II ♦ (*FYE Requirement #4*) - Credit Hours: 4.00
- Written Communication Selective (*FYE Requirement #8*) - Credit Hours: 3.00-4.00 (satisfies Written Communication for core) or
- Oral Communication Selective (*FYE Requirement #8*) - Credit Hours: 3.00 (satisfies Oral Communication for core)
- First-Year Engineering Selective (*FYE Requirement # 7*) - Credit Hours: 3.00-4.00
- CHM 11600 - General Chemistry or
- CS 15900 - C Programming or
- BIOL 11000 - Fundamentals Of Biology I or
- BIOL 11100 - Fundamentals Of Biology II

#### 16 Credits

### Sample 3-Year Plan

#### Course Options in First Year Engineering:

*These courses need to be incorporated in the remaining 6 semesters if not taken in First Year Engineering*

- CHM 11600 - General Chemistry
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- Oral Communication Selective - Credit Hours: 3.00

- Written Communication Selective - Credit Hours: 3.00-4.00

## Fall 2nd Year

- ABE 20500 - Computations For Engineering Systems
- ABE 29000 - Sophomore Seminar
- CHM 11600 - General Chemistry ♦ (if not taken in First Year Engineering)
- MA 26100 - Multivariate Calculus
- ME 27000 - Basic Mechanics I ♦
- PHYS 24100 - Electricity And Optics ♦

18 Credits

## Spring 2nd Year

- ABE 21000 - Thermodynamics Principles Of Engineering And Biological Systems
- AGRY 25500 - Soil Science ♦
- MA 26200 - Linear Algebra And Differential Equations
- ME 27400 - Basic Mechanics II ♦
- College of Agriculture Biological Science Selective - Credit Hours: 4.00

17 Credits

## Fall 3rd Year

- ABE 30500 - Physical Properties Of Biological Materials
- ABE 32500 - Soil And Water Resource Engineering
- CE 34000 - Hydraulics ♦
- CE 34300 - Elementary Hydraulics Laboratory ♦
- Humanities or Social Science Selective - Credit Hours: 3.00
- **Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics

17 Credits

## Spring 3rd Year

- ABE 31400 - Design Of Electronic Systems
- CE 38300 - Geotechnical Engineering I ♦
- ABE 42500 - Water Quality Engineering or
- ABE 42600 - Ecological Restoration Engineering

- Agricultural Selective - Credit Hours: 3.00
- College of Agriculture Biological Science Selective - Credit Hours: 4.00

## 16 Credits

### Fall 4th Year

- ABE 48400 - Project Planning And Management
- ABE 49000 - Professional Practice In Agricultural And Biological Engineering
- Environmental and Natural Resources Engineering Technical Selective - Credit Hours: 3.00
- Engineering Technical Selective - Credit Hours: 3.00
- Engineering Technical Selective - Credit Hours: 3.00
- Human Cultures: Humanities - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 17 Credits

### Spring 4th Year

- ABE 48600 - Agricultural Engineering Design
- Environmental and Natural Resources Engineering Technical Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours 3.00
- Electives - Credit Hours 0.00-2.00

## 14-15 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should

know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Minor

### Agricultural Systems Management Minor

#### About the Program

Agricultural Systems Management (ASM) prepares individuals to organize and manage environmentally sound, technology-based businesses. The program's emphasis is on planning and directing an industry or business project with responsibility for results. ASM is based on an understanding of how equipment and buildings are used with plants and animals and their products. These processes require an understanding of the biological sciences to produce and maintain top product quality.

Computer skills are taught and used throughout the curriculum. Computers are used to collect and analyze data, and then using that information, to control machines and processes. Other uses involve planning layouts of equipment and buildings, creating graphics for reports, etc.

Agricultural Systems Management students also take several of courses in communications, business management and agricultural sciences, in addition to their specialty courses based in the Agricultural and Biological Engineering Department. The program provides an in-depth technical knowledge for selecting and applying advanced technologies in the food, feed, fiber, and fuel system. Graduates are prepared to solve a wide variety of business and technical problems in a job field that continues to grow.

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program:**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

#### Requirements for the Minor (18 credits)

##### Required Courses (6 credits)

- ASM 10400 - Introduction To Agricultural Systems

- ASM 10500 - Computing Technology With Applications

## Selective Courses (12 credits)

- Nine credits must be ASM courses
- At least six credits must be 30000+ level courses, of which three credits must be ASM courses.
- AGEC 31000 - Farm Organization
- AGEC 33000 - Management Methods For Agricultural Business
- AGRY 37500 - Crop Production Systems
- ANSC 22100 - Principles Of Animal Nutrition
- ASM 20100 - Construction And Maintenance
- ASM 21100 - Technical Graphic Communications
- ASM 21600 - Introduction To Surveying
- ASM 22200 - Crop Production Equipment
- ASM 23600 - Environmental Systems Management
- ASM 24500 - Materials Handling And Processing
- ASM 34500 - Power Units And Power Trains
- ASM 33300 - Facilities Planning And Management
- ASM 35000 - Safety In Agriculture
- ASM 42000 - Electric Power And Controls
- ASM 42200 - Advanced Machine Technology For Agricultural Crop Production
- ASM 51000 - Agrosecurity-Emergency Management For Agricultural Production Operations
- ASM 51100 - Foundations In Homeland Security Studies
- ASM 51200 - Managing Resources and Applications for Homeland Security
- ASM 53000 - Power And Machinery Management
- ASM 54000 - Geographic Information System Application
- ASM 55000 - Grain Drying And Storage
- ASM 59000 - Special Problems Title: GEARE

## Notes

- Department Permission is not required to enroll in this minor.
- No more than 6 credits of special problems (ASM 49000/49100 and/or 59000/59100) may apply to the minor. Request to use special problems courses toward the minor must be stated on the course contract form and approved by the Department.

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## **Biotechnology Minor**

### **About the Minor**

Biotechnology refers to harnessing the properties of a living organism to develop and manufacture products that benefit human life. With this minor, you will gain the basic knowledge and understanding of life science-based products, processes, and product quality to prepare you for employment opportunities in the area of biotechnology and biotech-manufacturing.

### **Requirements for the Minor (16 credits)**

#### **Required Courses (7 credits)**

- ABE 22600 - Biotechnology Laboratory I
- ABE 22700 - Biotechnology Laboratory II
- ABE 51100 - Drug Development or
- ABE 51200 - Good Regulatory Practices

#### **Lab Science Selectives (6 credits)**

- BIOL 11000 - Fundamentals Of Biology I
- BIOL 11100 - Fundamentals Of Biology II
- BIOL 13500 - First Year Biology Laboratory
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- CHM 11100 - General Chemistry
- CHM 11200 - General Chemistry
- CHM 11500 - General Chemistry
- CHM 11600 - General Chemistry
- CHM 12901 - General Chemistry With A Biological Focus

#### **Statistics Selective (3 credits)**

- CHE 32000 - Statistical Modeling And Quality Enhancement
- IET 31600 - Statistical Quality Control
- STAT 22500 - Introduction To Probability Models
- STAT 30100 - Elementary Statistical Methods
- STAT 35000 - Introduction To Statistics
- STAT 35500 - Statistics For Data Science
- STAT 50300 - Statistical Methods For Biology
- STAT 51100 - Statistical Methods

### **Notes**



- All courses must have a grade of a "C-" or higher.

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## Pre-Program

# Pre-Agricultural and Biological Engineering

## About the Program

Pre-ABE is an alternative to First Year Engineering. The required classes are identical to First Year Engineering requirements. Because of our ties to Agriculture, we have the ability to have engineering students join our program as freshmen. Some of the advantages of coming through Pre-ABE:

- Start in the program you plan to join,
- Be connected from the start - so you know when companies that hire our students will be providing information sessions, etc.
- More likely to receive scholarships from the College of Agriculture

Upon successful completion of the one year Pre-Agricultural and Biological Engineering curriculum students can move to their professional program of choice within Agricultural and Biological Engineering.

**Some of the factors that contribute to Agricultural & Biological Engineering at Purdue University being a top ranked program: &nbsp;**

- Multiple opportunities for interaction with faculty in laboratories and in classes
- Student Competitions, Clubs, Global Experiences
- Personalized advising and attention from faculty
- Practical curriculum for industrial careers
- Great opportunities for internships and undergraduate research.
- Numerous departmental scholarships
- Excellent placement record and starting salaries

Department of Agricultural and Biological Engineering

Check our program videos below and take a look at some senior projects. We hope to see you in ABE soon!

- Biological Engineering Video
- Environmental and Natural Resources Engineering Video
- Machine Systems Engineering Video

Pre-Agricultural and Biological Engineering Major Change (CODO) Requirements

## Pre-Program Requirement

## Other Departmental/Program Course Requirements (32-34 credits)

- ENGR 13100 - Transforming Ideas To Innovation I (satisfies Information Literacy for core)
- ENGR 13200 - Transforming Ideas To Innovation II
- CHM 11500 - General Chemistry (satisfies Science #1 for core)
- CHM 11600 - General Chemistry or
- CS 15900 - C Programming or
- CS 17700 - Programming With Multimedia Objects
- MA 16500 - Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16100 - Plane Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core)
- MA 16600 - Analytic Geometry And Calculus II or
- MA 16200 - Plane Analytic Geometry And Calculus II
- PHYS 17200 - Modern Mechanics (satisfies Science #2 for core)
- Human Cultures: Humanities Selective- Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Program Requirements

### Fall 1st Year

- ENGR 13100 - Transforming Ideas To Innovation I ♦
- CHM 11500 - General Chemistry ♦
- MA 16500 - Analytic Geometry And Calculus I ♦ or
- MA 16100 - Plane Analytic Geometry And Calculus I ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00 ♦

### 16-17 Credits

### Spring 1st Year

- ENGR 13200 - Transforming Ideas To Innovation II ♦
- CHM 11600 - General Chemistry ♦ or
- CS 15900 - C Programming ♦ or
- CS 17700 - Programming With Multimedia Objects ♦
- MA 16600 - Analytic Geometry And Calculus II ♦ or
- MA 16200 - Plane Analytic Geometry And Calculus II ♦
- PHYS 17200 - Modern Mechanics ♦
- Oral Communication Selective - Credit Hours: 3.00 ♦

### 16-17 Credits

## Notes

- Students pursuing Biological Engineering majors should take CHM 11600. Students pursuing Agricultural Engineering or Environmental and Natural Resources Engineering majors may take CHM 11600 or CS 15900 or CS 17700.
- Students must earn a C- or better in all courses used to fulfill the above requirements if the grade is posted to the Purdue transcript, with the exception of the Human Culture Humanities Selective.

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Program Information

### Agricultural Engineering Supplemental Information

#### Agricultural Selective (3 Credits)

- ABE 10000:59999
- AGECE 10000:59999
- AGR 10000:59999
- AGRY 10000:59999
- ANSC 10000:59999
- ASEC 10000:59999
- ASM 10000:59999
- BCHM 10000:59999
- BTNY 10000:59999
- ENTM 10000:59999
- FNR 10000:59999
- FS 10000:59999
- HORT 10000:59999
- LA 10000:59999
- NRES 10000:59999

#### College of Agriculture: Biological Science Selective (8 credits)

*To fulfill the biological sciences core requirement, all students must complete at least two hours of laboratory credit in biological sciences each week for 32 weeks, or equivalent. Completion of course sequences is recommended. Courses with an (\*) have a laboratory component.*

- BIOL 11000 - Fundamentals Of Biology I \*
- BIOL 11100 - Fundamentals Of Biology II \*
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First Year Biology Laboratory \*
- BIOL 20300 - Human Anatomy And Physiology \*
- BIOL 20400 - Human Anatomy And Physiology \*
- BIOL 22100 - Introduction To Microbiology \*
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function \*
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology \*
- BIOL 29500 - Special Assignments (Title: Quantitative Biology of the Living Cell)
- BTNY 11000 - Introduction To Plant Science \*
- BTNY 12000 - Principles Of Plant Biology I
- BTNY 12100 - Principles Of Plant Biology II
- HORT 30100 - Plant Physiology \*

## Engineering Technical Selective (6 Credits)

- ABE 46000 - Sensors And Process Control
- ABE 49500 - Select Topics In Agricultural And Biological Engineering
- ABE 49800 - Undergraduate Research In Agricultural And Biological Engineering
- ABE 49900 - Thesis Research
- ABE 53100 - Instrumentation And Data Acquisition
- ABE 54500 - Design Of Off-Highway Vehicles
- ABE 58000 - Process Engineering Of Renewable Resources
- CE 38300 - Geotechnical Engineering I
- ECE 20700 - Electronic Measurement Techniques
- IE 37000 - Manufacturing Processes I
- IE 34300 - Engineering Economics
- IE 57700 - Human Factors In Engineering
- ME 26300 - Introduction To Mechanical Engineering Design, Innovation And Entrepreneurship
- ME 30000 - Thermodynamics II
- ME 31500 - Heat And Mass Transfer
- ME 36500 - Measurement And Control Systems I
- ME 37500 - Measurement And Control Systems II
- ME 41300 - Noise Control
- ME 41800 - Engineering Of Environmental Systems And Equipment
- ME 43300 - Principles Of Turbomachinery
- ME 44000 - Automotive Prime Movers: Green Engines And Clean Fuel
- ME 47500 - Automatic Control Systems
- MSE 23000 - Structure And Properties Of Materials

## Agricultural Systems Management Supplemental Information

### Agricultural Selective (12 Credits)

- ABE 10000:59999
- AGEC 10000:59999
- AGR 10000:59999
- AGRY 10000:59999
- ANSC 10000:59999
- ASEC 10000:59999
- ASM 10000:59999
- BCHM 10000:59999
- BTNY 10000:59999
- ENTM 10000:59999
- FNR 10000:59999
- FS 10000:59999
- HORT 10000:59999
- LA 10000:59999
- NRES 10000:59999
- SFS 10000:59999

## College of Agriculture: Biological Science Selective (8 credits)

*To fulfill the biological sciences core requirement, all students must complete at least two hours of laboratory credit in biological sciences each week for 32 weeks, or equivalent. Completion of course sequences is recommended. Courses with an (\*) have a laboratory component.*

- BIOL 11000 - Fundamentals Of Biology I \*
- BIOL 11100 - Fundamentals Of Biology II \*
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First Year Biology Laboratory \*
- BIOL 20300 - Human Anatomy And Physiology \*
- BIOL 20400 - Human Anatomy And Physiology \*
- BIOL 22100 - Introduction To Microbiology \*
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function \*
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology \*
- BIOL 29500 - Special Assignments (Title: Quantitative Biology of the Living Cell)
- BTNY 11000 - Introduction To Plant Science \*
- BTNY 12000 - Principles Of Plant Biology I
- BTNY 12100 - Principles Of Plant Biology II
- HORT 30100 - Plant Physiology \*

## Leadership and Management Selective (6 credits)

- OLS 37500 - Training Methods
- OLS 37600 - Human Resource Issues
- OLS 38600 - Leadership For Organizational Change And Innovation
- OLS 45400 - Gender And Diversity In Management
- OLS 47700 - Conflict Management
- OLS 48400 - Leadership Strategies For Quality And Productivity
- OLS 48900 - Digital Transformation
- TLI 25500 - Foundations Of Human Resource Development
- TLI 31400 - Leading Innovation In Organizations

## Biological Engineering Supplemental Information

**Included below:**

### Biological Engineering Major Selectives

- Biological Science Selectives
- Engineering or Life Science Selective

### Cellular and Biomolecular Engineering Concentration

- Cellular & Biomolecular Engineering Concentration: Biological Science Selective
- Cellular and Biomolecular Engineering Concentration: Science Selective

Food and Biological Process Engineering Concentration: Biological or Food Science Selective

## ABE Engineering Selectives (6-9 hours)

- ABE 31400 - Design Of Electronic Systems
- ABE 32500 - Soil And Water Resource Engineering
- ABE 33000 - Design Of Machine Components
- ABE 42500 - Water Quality Engineering
- ABE 42600 - Ecological Restoration Engineering
- ABE 43500 - Hydraulic Control Systems For Mobile Equipment
- ABE 44000 - Cell And Molecular Design Principles
- ABE 45000 - Finite Element Method In Design And Optimization
- ABE 52200 - Ecohydrology
- ABE 53100 - Instrumentation And Data Acquisition
- ABE 54000 - Principles Of Systems & Synthetic Biology
- ABE 56000 - Biosensors: Fundamentals And Applications
- ABE 58000 - Process Engineering Of Renewable Resources

## College of Agriculture: Biological Science Selective (8 credits)

*To fulfill the biological sciences core requirement, all students must complete at least two hours of laboratory credit in biological sciences each week for 32 weeks, or equivalent. Completion of course sequences is recommended. Courses with an (\*) have a laboratory component.*

- BIOL 11000 - Fundamentals Of Biology I \*
- BIOL 11100 - Fundamentals Of Biology II \*
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First Year Biology Laboratory \*
- BIOL 20300 - Human Anatomy And Physiology \*
- BIOL 20400 - Human Anatomy And Physiology \*
- BIOL 22100 - Introduction To Microbiology \*
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function \*
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology \*
- BIOL 29500 - Special Assignments (Title: Quantitative Biology of the Living Cell)
- BTNY 11000 - Introduction To Plant Science \*
- BTNY 12000 - Principles Of Plant Biology I
- BTNY 12100 - Principles Of Plant Biology II
- HORT 30100 - Plant Physiology \*

## Life Sciences Selective (3-6 hours)

- ABE 22600 - Biotechnology Laboratory I
- ABE 22700 - Biotechnology Laboratory II
- ABE 51200 - Good Regulatory Practices
- AGRY 25500 - Soil Science
- ABE 51100 - Drug Development
- ABE 58000 - Process Engineering Of Renewable Resources
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 11000 - Fundamentals Of Biology I
- BIOL 11100 - Fundamentals Of Biology II
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 22100 - Introduction To Microbiology
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- BIOL 43200 - Reproductive Physiology
- BIOL 43600 - Neurobiology
- BIOL 47800 - Introduction To Bioinformatics
- BIOL 53300 - Medical Microbiology
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- FS 36100 - Food Plant Sanitation
- FS 36200 - Food Microbiology
- FS 45300 - Food Chemistry
- HORT 30100 - Plant Physiology
- IPPH 56200 - Introduction To Pharmaceutical Manufacturing Processes
- NUTR 20500 - Food Science I
- NUTR 31500 - Fundamentals Of Nutrition
- NUTR 45300 - Food Chemistry

## Biological Engineering Concentration Selectives

### BioEnvironmental Engineering Concentration: Engineering Selectives (3 hours)

- ABE 42500 - Water Quality Engineering
- ABE 42600 - Ecological Restoration Engineering
- ABE 52200 - Ecohydrology



- ABE 58000 - Process Engineering Of Renewable Resources

## Cellular and Biomolecular Engineering Concentration: Science Selectives

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- BIOL 11000 - Fundamentals Of Biology I
- BIOL 11100 - Fundamentals Of Biology II
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 20300 - Human Anatomy And Physiology
- BIOL 20400 - Human Anatomy And Physiology
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 43200 - Reproductive Physiology
- BIOL 43600 - Neurobiology
- BIOL 47800 - Introduction To Bioinformatics
- BIOL 53300 - Medical Microbiology
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II

## Food and Biological Process Engineering Concentration: Biological or Food Science Selective

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- BIOL 28600 - Introduction To Ecology And Evolution
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- FS 36100 - Food Plant Sanitation
- FS 36200 - Food Microbiology
- FS 45300 - Food Chemistry
- NUTR 45300 - Food Chemistry
- NUTR 31500 - Fundamentals Of Nutrition

## Pharmaceutical Process Engineering Concentration: Pharmaceutical Sciences Selectives (3-4) hours)

- ABE 51100 - Drug Development
- ABE 51200 - Good Regulatory Practices
- IPPH 56200 - Introduction To Pharmaceutical Manufacturing Processes
- PHRM 42800 - Dosage Forms I
- PHRM 42900 - Dosage Forms II

# Environmental and Natural Resources Engineering Supplemental Information

## Agriculture Selective (3 credits)

- ABE 10000:59999
- AGECE 10000:59999
- AGR 10000:59999
- AGRY 10000:59999
- ANSC 10000:59999
- ASEC 10000:59999
- ASM 10000:59999
- BCHM 10000:59999
- BTNY 10000:59999
- ENTM 10000:59999
- FNR 10000:59999
- FS 10000:59999
- HORT 10000:59999
- LA 10000:59999
- NRES 10000:59999
- SFS 10000:59999

## College of Agriculture: Biological Science Selective (8 credits)

*To fulfill the biological sciences core requirement, all students must complete at least two hours of laboratory credit in biological sciences each week for 32 weeks, or equivalent. Completion of course sequences is recommended. Courses with an (\*) have a laboratory component.*

- BIOL 11000 - Fundamentals Of Biology I \*
- BIOL 11100 - Fundamentals Of Biology II \*
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First Year Biology Laboratory \*
- BIOL 20300 - Human Anatomy And Physiology \*
- BIOL 20400 - Human Anatomy And Physiology \*
- BIOL 22100 - Introduction To Microbiology \*
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function \*
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology \*
- BIOL 29500 - Special Assignments (Title: Quantitative Biology of the Living Cell)
- BTNY 11000 - Introduction To Plant Science \*
- BTNY 12000 - Principles Of Plant Biology I
- BTNY 12100 - Principles Of Plant Biology II
- HORT 30100 - Plant Physiology \*

## Engineering Technical Selective (6 credits)

- ABE 32000 - Solid Modeling, Simulation, And Analysis
- ABE 33000 - Design Of Machine Components
- ABE 42500 - Water Quality Engineering
- ABE 42600 - Ecological Restoration Engineering
- ABE 43500 - Hydraulic Control Systems For Mobile Equipment
- ABE 45000 - Finite Element Method In Design And Optimization
- ABE 46000 - Sensors And Process Control
- ABE 49500 - Select Topics In Agricultural And Biological Engineering
- ABE 49800 - Undergraduate Research In Agricultural And Biological Engineering
- ABE 49900 - Thesis Research
- ABE 52200 - Ecohydrology
- ABE 52700 - Computer Models In Environmental And Natural Resources Engineering
- ABE 52900 - Nonpoint Source Pollution Engineering
- ABE 53100 - Instrumentation And Data Acquisition
- ABE 54500 - Design Of Off-Highway Vehicles
- ABE 58000 - Process Engineering Of Renewable Resources
- CE 35000 - Introduction To Environmental And Ecological Engineering
- CE 35500 - Engineering Environmental Sustainability
- CE 40800 - Geographic Information Systems In Engineering
- CE 44000 - Urban Hydraulics
- CE 44200 - Introduction To Hydrology
- CE 44300 - Introductory Environmental Fluid Mechanics
- CE 45600 - Wastewater Treatment Processes
- CE 45700 - Air Pollution Control And Design
- CE 49700 - Civil Engineering Projects
- CE 54000 - Open Channel Hydraulics
- CE 54200 - Hydrology
- CE 54300 - Coastal Engineering
- CE 54400 - Subsurface Hydrology
- CE 54500 - Sediment Transport Engineering
- CE 54900 - Computational Watershed Hydrology
- CE 55000 - Physico-Chemical Processes In Environmental Engineering I
- CE 55700 - Air Quality Management
- CE 55900 - Water Quality Modeling
- CE 59300 - Environmental Geotechnology
- EEE 35000 - Introduction To Environmental And Ecological Engineering
- EEE 35500 - Engineering Environmental Sustainability
- EPCS 30100 - Junior Participation In EPICS and
- EPCS 30200 - Junior Participation In EPICS
- EPCS 41100 - Senior Design Participation In EPICS and
- EPCS 41200 - Senior Design Participation In EPICS
- GEP Global Engineering Projects

## Environmental and Natural Resources Engineering Technical Selectives (6 credits)

- ABE 42500 - Water Quality Engineering
- ABE 42600 - Ecological Restoration Engineering
- ABE 46000 - Sensors And Process Control
- ABE 49500 - Select Topics In Agricultural And Biological Engineering
- ABE 49800 - Undergraduate Research In Agricultural And Biological Engineering
- ABE 49900 - Thesis Research
- ABE 52200 - Ecohydrology
- ABE 52700 - Computer Models In Environmental And Natural Resources Engineering
- ABE 52900 - Nonpoint Source Pollution Engineering
- ABE 53100 - Instrumentation And Data Acquisition
- ABE 59000 - Special Problems
- ABE 59100 - Special Topics
- AGRY 33700 - Environmental Hydrology
- AGRY 33800 - Environmental Field Skills
- AGRY 54500 - Remote Sensing Of Land Resources
- ASM 54000 - Geographic Information System Application
- CE 35000 - Introduction To Environmental And Ecological Engineering
- CE 35500 - Engineering Environmental Sustainability
- CE 38300 - Geotechnical Engineering I
- CE 44200 - Introduction To Hydrology
- CE 54200 - Hydrology
- EEE 35000 - Introduction To Environmental And Ecological Engineering
- EEE 35500 - Engineering Environmental Sustainability
- FNR 55800 - Remote Sensing Analysis And Applications
- FNR 21000 - Natural Resource Information Management
- FNR 35700 - Fundamental Remote Sensing

## Department of Agricultural Economics

### Overview

The Department of Agricultural Economics has a long history of preparing students for careers in the food and agricultural industry as well as preparation for graduate and law school. The variation of majors offers students the opportunity to focus in agribusiness, economics, sales and marketing, or farm management.

Students have the opportunity to learn from faculty who lead the department's Center for Food and Agricultural Business and the Center for Commercial Agriculture. The Center for Food and Agricultural Business combines research with real-world applications to offer seminars, workshops, and custom programs to the same companies that are hiring our undergraduate students for internships and full-time positions. The Center for Commercial Agriculture has a vision to "be the leading source of management education and knowledge generation for farmers" bringing a wealth of experienced faculty to guide students interested in a career path in production agriculture.

Students are advised by a passionate group of academic advisors who encourage students to enhance their Purdue experience by participating in transformational experiences. These experiences range from attending a national or

campus leadership conference, studying abroad, competing in an academic competition, completing an undergraduate research project, serving as an officer in one of the numerous campus organizations, etc.

## **Faculty (website)**

## **Department of Agricultural Economics (website)**

## **Contact Information**

Department of Agricultural Economics

Purdue University

Krannert Building  
403 West State Street  
West Lafayette, IN 47907  
Phone: (765) 494-4201

Email: LeeAnn Williams (leewill@purdue.edu)

Advising & Student Services Office: Krannert Building (KRAN), Room 681

## **Prospective Undergraduate Students (website)**

## **Current Undergraduate Students (website)**

## **Graduate Information**

For Graduate Information please see [Agricultural Economics Graduate Program Information](#) .

## **Baccalaureate**

## **Agribusiness: Agribusiness Management Concentration, BS**

### About the Program

Students completing a degree in Agribusiness must choose a concentration from five choices: Agribusiness Management, Agricultural Finance, Agricultural Marketing, Commodity Marketing, and Food Marketing. The Agribusiness Management concentration requires courses in supply chain management, human relations management, strategic management, and agricultural or business law. Students are prepared to enter managerial positions in a wide

variety of agribusiness and non-agribusiness firms as Supply Chain Manager, Production Manager, Account Manager, Human Resource Specialist, and Facilities Location Manager.

Agricultural Economics Website

Agribusiness Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (60 credits)

### Required Major Courses (25 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics

### Agribusiness Management Concentration Courses (15 credits)

- AGEC 43000 - Agricultural And Food Business Strategy (Capstone)
- AGEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- Agricultural Economics Selective (AGEC 20300:59999) - Credit Hours: 3.00
- Human Relations Management Selective - Credit Hours: 3.00
- MGMT 44301 - Management Of Human Resources
- MGMT 44428 - Human Resources Management
- OBHR 33000 - Introduction To Organizational Behavior
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership
- Industrial Technology Selective - Credit Hours: 3.00
- IET 21400 - Introduction To Supply Chain Management Technology
- IET 23500 - Introduction To Systems Thinking And Process Improvement
- IET 31600 - Statistical Quality Control

- IET 41400 - Financial Analysis For Technology Systems

## Agricultural Economics Departmental Selectives (20 credits)

- AGECE Biological Science Selective - Credit Hours: 8.00
- AGECE Economics Selective (meets CoA Upper level Humanities/Social Science requirement) - Credit Hours: 3.00
- AGECE Food and Agribusiness Management Selective - Credit Hours: 6.00
- AGECE Additional Mathematics or Science Selective - Credit Hours: 3.00

Agricultural Economics Department Supplemental Information

## Other Departmental/Program Course Requirements (43-44 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning and Information Literacy for core)
- STAT 30100 - Elementary Statistical Methods ♦
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology & Society Selective for core - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## Electives (16-17 credits)

- Electives - Credit Hours: 16.00-17.00

## Supplemental List

- Agricultural Economics Department Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)



- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- MA 16010 - Applied Calculus I
- AGEC Biological Sciences Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business

- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC Biological Sciences Selective - Credit Hours: 4.00
- Oral Communication Selective - Credit Hours: 3.00
- Science, Technology, & Society Selective - Credit Hours: 3.00

## 16 Credits

### Fall 2nd Year

- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- STAT 30100 - Elementary Statistical Methods ♦
- Human Cultures: Humanities Selectives - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- AGEC 33000 - Management Methods For Agricultural Business
- CHM 11200 - General Chemistry ♦
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦  
**Human Relations Management Selective** - Credit Hours: 3.00
- MGMT 44301 - Management Of Human Resources or
- MGMT 44428 - Human Resources Management or
- OBHR 33000 - Introduction To Organizational Behavior or
- TLI 11200 - Foundations Of Organizational Leadership or
- TLI 15200 - Business Principles For Organizational Leadership
- Written or Oral Communication Selective - Credit Hours: 3.00

## 15 Credits

### Fall 3rd Year

- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics  
**Industrial Technology Selective** - Credit Hours: 3.00
- IET 21400 - Introduction To Supply Chain Management Technology or
- IET 23500 - Introduction To Systems Thinking And Process Improvement or
- IET 31600 - Statistical Quality Control or

- IET 41400 - Financial Analysis For Technology Systems
- Humanities or Social Science Selective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- AGECE 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- AGECE Food and Agribusiness Management Selective - Credit Hours: 3.00
- AGECE Mathematics or Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- Agricultural Economics Selective (AGECE 20300:59999) - Credit Hours: 3.00
- AGECE Economics Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective - Credit Hours: 3.00
- Electives - Credit Hours: 3.00

## 15 Credits

### Spring 4th Year

- AGECE 43000 - Agricultural And Food Business Strategy
- AGECE Food and Agribusiness Management Selective - Credit Hours: 3.00
- Electives - Credit Hours: 7.00-8.00

## 13-14 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agribusiness: Agricultural Finance Concentration, BS**

### About the Program

Students completing a degree in Agribusiness must choose a concentration from five choices: Agribusiness Management, Agricultural Finance, Agricultural Marketing, Commodity Marketing, and Food Marketing. The Agricultural Finance concentration requires courses in estate planning or federal income tax law, capital investment analysis, strategic management, agricultural or business law, and additional accounting. Students are prepared to enter a vast number of finance careers including Analyst, Financial Services Officer, Commercial Business Banker or Loan Officer.

[Agricultural Economics Website](#)

[Agribusiness Major Change \(CODO\) Requirements](#)

### Degree Requirements

## **120 Credits Required**

### Departmental/Program Major Courses (60 credits)

#### Required Major Courses (25 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or

- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics

### Agricultural Finance Concentration Courses (18 credits)

- AGEC 42500 - Estate Planning And Property Transfer or
- AGEC 45600 - Federal Income Tax Law
- AGEC 43000 - Agricultural And Food Business Strategy (Capstone)
- AGEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- AGEC 52400 - Agricultural Finance
- MGMT 20100 - Management Accounting I
- Agricultural Economics Selective (AGEC 20300:59999) - Credit Hours: 3.00

### AGEC Departmental Selectives (17 credits)

- College of Agriculture Biological Science Selective - Credit Hours: 8.00
- AGEC Economics Selective (meets CoA Upper level Humanites/Social Science requirement) - Credit Hours: 3.00
- AGEC Food and Agribusiness Management Selective - Credit Hours: 3.00
- College of Agriculture Mathematics or Science Selective - Credit Hours: 3.00

Agricultural Economics Department Supplemental Information

### Other Departmental/Program Course Requirements (43-44 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00 (30000+ level met with ECON Selective)

- Science, Technology & Society Selective for core - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## Electives (16-17 credits)

- Electives - Credit Hours: 16.00-17.00

## Supplemental List

- Agricultural Economics Department Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- Students **must complete a College of Agriculture capstone course.** This course can be one of Agricultural Economics' Capstone Courses (AGEC41100, 42700, 43000, 43100, or 49900) or any approved College of Agriculture capstone course.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00

- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or

- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- MA 16010 - Applied Calculus I ♦
- AGECE Biological Sciences Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- AGECE 20201 - Introduction To Data Analytics For Agricultural Business
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGECE Biological Sciences Selective - Credit Hours: 4.00
- Science, Technology, & Society Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00

### 16 Credits

### Fall 2nd Year

- AGECE 22000 - Economics Of Agricultural Markets
- AGECE 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- STAT 30100 - Elementary Statistical Methods ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00



## 16 Credits

### Spring 2nd Year

- AGEC 33000 - Management Methods For Agricultural Business
- CHM 11200 - General Chemistry ♦
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective - Credit Hours: 3.00

## 15 Credits

### Fall 3rd Year

- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 42400 - Financial Management Of Agricultural Business
- MGMT 20100 - Management Accounting I
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics
- Elective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- AGEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- Agricultural Economics Major Selective (AGEC 20300:59999) - Credit Hours: 3.00
- AGEC Food and Agribusiness Management Selective - Credit Hours: 3.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- AGEC 42500 - Estate Planning And Property Transfer or
- AGEC 45600 - Federal Income Tax Law
- AGEC Economics Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Electives - Credit Hours: 5.00

## 15 Credits

## Spring 4th Year

- AGEC 43000 - Agricultural And Food Business Strategy
- AGEC 52400 - Agricultural Finance
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 4.00-5.00

## 13-14 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agribusiness: Agricultural Marketing Concentration, BS**

### About the Program

Students completing a degree in Agribusiness must choose a concentration from five choices: Agribusiness Management, Agricultural Finance, Agricultural Marketing, Commodity Marketing, and Food Marketing. The Agricultural Marketing concentration requires courses in sales and marketing analytics and then allows the students to select four business courses to complete the concentration. Students are prepared for careers as a Sales Representative, Marketing Representative, District Sales Manager, and Brand Manager in a wide variety of agribusiness and non-agribusiness firms.

Agricultural Economics Website

Agribusiness Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (60 credits)

### Required Major Courses (25 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics

### Agricultural Marketing Concentration Courses (15 credits)

- AGEC 33100 - Principles Of Industrial Selling
- AGEC 42700 - Advanced Agribusiness Marketing (Capstone)
- AGEC 42900 - Agri-Marketing Analytics
- Agricultural Economics Selective (AGEC 20300:59999) - Credit Hours: 6.00

### AGEC Departmental Selectives (20 credits)

- College of Agriculture Biological Science Selective - Credit Hours: 8.00
- AGEC Economics Selective (satisfies College of Agriculture (CoA) Humanities/Social Science 30000+ level requirement) - Credit Hours: 3.00

- AGEC Food and Agribusiness Management Selective - Credit Hours: 6.00
- College of Agriculture Mathematics or Science Selective - Credit Hours: 3.00

#### **Agricultural Economics Department Supplemental Information**

### Other Departmental/Program Course Requirements (43-44 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology & Society Selective for core - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

### Electives (16-17 credits)

- Electives - Credit Hours: 16.00-17.00

### Supplemental List

Agricultural Economics Department Supplemental Information

### GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

### College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

### Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However,

Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
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- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)

- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency website.

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- MA 16010 - Applied Calculus I
- AGECE Biological Sciences Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGECE 20201 - Introduction To Data Analytics For Agricultural Business
- AGECE Biological Sciences Selective - Credit Hours: 4.00
- Science, Technology, & Society Selective - Credit Hours: 3.00

- Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

### Fall 2nd Year

- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- STAT 30100 - Elementary Statistical Methods ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- AGEC 33000 - Management Methods For Agricultural Business
- CHM 11200 - General Chemistry ♦
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective - Credit Hours: 3.00

## 15 Credits

### Fall 3rd Year

- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33100 - Principles Of Industrial Selling
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics
- Elective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- Agricultural Economics Selective (AGEC 20300:59999) - Credit Hours: 3.00
- AGEC Food and Agribusiness Management Selective - Credit Hours: 3.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours 3.00

## 15 Credits

### Fall 4th Year

- AGEC 42700 - Advanced Agribusiness Marketing
- AGEC Economics Selective - Credit Hours: 3.00
- AGEC Food and Agribusiness Management Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Spring 4th Year

- AGEC 42900 - Agri-Marketing Analytics
- Agricultural Economics Selective (AGEC 20300:59999) - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+level) - Credit Hours: 3.00
- Electives - Credit Hours: 4.00-5.00

## 13-14 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.



Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agribusiness: Commodity Marketing Concentration, BS**

### About the Program

Students completing a degree in Agribusiness must choose a concentration from five choices: Agribusiness Management, Agricultural Finance, Agricultural Marketing, Commodity Marketing, and Food Marketing. The Commodity Marketing concentration requires courses in price analysis, commodity marketing, strategic management, and production agriculture. Students are prepared for careers in commodity merchandising and procurement for a vast number of agricultural firms such as grain handling companies; feed manufacturers; and meat, dairy, and poultry processing industries.

[Agricultural Economics Website](#)

[Agribusiness Major Change \(CODO\) Requirements](#)

### Degree Requirements

## **120 Credits Required**

### Departmental/Program Major Courses (60 credits)

#### Required Major Courses (25 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics

## Commodity Marketing Concentration Courses (18 credits)

- AGEC 30500 - Agricultural Prices
- AGEC 32100 - Principles Of Commodity Marketing
- AGEC 42100 - Advanced Commodity Marketing
- AGEC 43000 - Agricultural And Food Business Strategy (Capstone)
- Agricultural Economics Selective (AGEC 20300:59999) - Credit Hours: 3.00
- Agronomy or Animal Science Selective (AGRY 20000+ level or ANSC 20000+ level) - Credit Hours: 3.00

## AGEC Departmental Selectives (17 credits)

- AGEC Biological Science Selective - Credit Hours: 8.00 (see supplemental list)
- AGEC Economics Selective - Credit Hours: 3.00 (see supplemental list)
- AGEC Food and Agribusiness Management Selective - Credit Hours: 3.00 (see supplemental list)
- AGEC Mathematics or Science Selective - Credit Hours: 3.00 (see supplemental list)

Agricultural Economics Department Supplemental Information

## Other Departmental /Program Course Requirements (43-44 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I ♦ (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology & Society Selective for core - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## Electives (16-17 credits)

Electives - Credit Hours: 16.00-17.00

## Supplemental List

- Agricultural Economics Department Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)

- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- MA 16010 - Applied Calculus I ♦
- AGEC Biological Sciences Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business

- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
  
- AGEC Biological Sciences Selective - Credit Hours: 4.00
- Oral Communication Selective - Credit Hours: 3.00
- Science, Technology, & Society Selective - Credit Hours: 3.00

## 16 Credits

### Fall 2nd Year

- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- STAT 30100 - Elementary Statistical Methods ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- AGEC 33000 - Management Methods For Agricultural Business
- CHM 11200 - General Chemistry ♦
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective - Credit Hours: 3.00

## 15 Credits

### Fall 3rd Year

- AGEC 32100 - Principles Of Commodity Marketing
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics
- Elective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- AGEC 42100 - Advanced Commodity Marketing
- Agronomy or Animal Science Selective (AGRY 20000+ level or ANSC 20000+ level) - Credit Hours: 3.00
- AGEC Food and Agribusiness Management Selective - Credit Hours: 3.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- AGEC 30500 - Agricultural Prices
- Agricultural Economics Selective (AGEC 20300:59999) - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 6.00

## 15 Credits

### Spring 4th Year

- AGEC 43000 - Agricultural And Food Business Strategy
- AGEC Economics Selective - Credit Hours: 3.00
- Humanities or Social Science - Credit Hours: 3.00
- Electives - Credit Hours: 4.00-5.00

## 13-14 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agribusiness: Food Marketing Concentration, BS**

### About the Program

Students completing a degree in Agribusiness must choose a concentration from five choices: Agribusiness Management, Agricultural Finance, Agricultural Marketing, Commodity Marketing, and Food Marketing. The Food Marketing concentration requires courses in sales, food retailing and distribution, marketing, food science, food packaging, nutrition, and food regulations. Students are prepared for careers as a Sales Representative, Marketing Representative, District Sales Manager, Brand Manager, and Retail Manager with food manufacturers and retail food businesses.

[Agricultural Economics Website](#)

[Agribusiness Major Change \(CODO\) Requirements](#)

### Degree Requirements

## **120 Credits Required**

### Departmental/Program Major Courses (59 credits)

#### Required Major Courses (25 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33000 - Management Methods For Agricultural Business

- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics

## Food Marketing Concentration Courses (17 credits)

- AGEC 33100 - Principles Of Industrial Selling
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 42700 - Advanced Agribusiness Marketing (Capstone)
- AGEC 42900 - Agri-Marketing Analytics
- FS 16100 - Science Of Food ♦
- FS 24500 - Food Packaging
- FS 34000 - Introduction To Food Law And Regulations

## AGEC Departmental Selectives (17 credits)

- AGEC Biological Science Selective - Credit Hours: 8.00 (see supplemental list)
- AGEC Economics Selective (used to meet the CoA Humanities/Social Science 30000+ level requirement) - Credit Hours: 3.00 (see supplemental list)
- AGEC Food and Agribusiness Management Selective - Credit Hours: 3.00 (see supplemental list)
- AGEC Mathematics or Science Selective - Credit Hours: 3.00 (see supplemental list)

Agricultural Economics Department Supplemental Information

## Other Departmental /Program Course Requirements (43-44 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology & Society Selective for core - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## Electives (17-18 credits)



- Electives - Credit Hours: 17.00-18.00

## Supplemental List

Agricultural Economics Department Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- MA 16010 - Applied Calculus I ♦
- AGEC Biological Sciences Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00-4.00

## 14-15 Credits

### Spring 1st Year

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC Biological Sciences Selective - Credit Hours: 4.00
- Science, Technology, & Society Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

### Fall 2nd Year

- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- FS 16100 - Science Of Food ♦
- STAT 30100 - Elementary Statistical Methods ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- AGEC 33000 - Management Methods For Agricultural Business
- CHM 11200 - General Chemistry ♦
- FS 24500 - Food Packaging
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

## Fall 3rd Year

- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33100 - Principles Of Industrial Selling
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics
- Elective - Credit Hours: 3.00

## 15 Credits

## Spring 3rd Year

- AGEC 33300 - Food Distribution - A Retailing Perspective
- FS 34000 - Introduction To Food Law And Regulations
- Humanities or Social Science Selective - Credit Hours: 3.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 6.00

## 16 Credits

## Fall 4th Year

- AGEC 42700 - Advanced Agribusiness Marketing
- AGEC Economics Selective - Credit Hours: 3.00
- AGEC Food and Agribusiness Management Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 12 Credits

## Spring 4th Year

- Humanities or Social Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 5.00-6.00
- AGEC 42900 - Agri-Marketing Analytics

## 14-15 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# **Agricultural Economics: Applied Agricultural Economics Concentration, BS**

## About the Program

Students completing a degree in Agricultural Economics must choose a concentration from three choices: Applied Agricultural Economics, Commodity Marketing, and Quantitative Analysis. The Applied Agricultural Economics concentration offers students a great deal of flexibility with 18 Agricultural Economics electives allowing the student to design their focus within the department and developing a strong foundation in economic theory.

[Agricultural Economics Website](#)

[Agricultural Economics Major Change \(CODO\) Requirements](#)

## Degree Requirements

# **120 Credits Required**

Departmental/Program Major Courses (54 credits)

Major Required Courses (13 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar

### Applied Agricultural Economics Concentration Courses (21 credits)

- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics
- Agricultural Economics Selective (AGEC 10000:59900) - Credit Hours: 18.00

### AGEC Departmental Selectives (20 credits)

- AGEC Biological Science Selective - Credit Hours: 8.00
- AGEC Economics Selective (meets CoA Upper level Humanites/Social Science requirement) - Credit Hours: 9.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00

Agricultural Economics Department Supplemental Information

### Other Departmental/Program Course Requirements (43-44 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I ♦ (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology & Society Selective - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (22-23 credits)

- Electives - Credit Hours: 22.00-23.00

## Supplemental List

Agricultural Economics Department Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- Students **must complete a College of Agriculture capstone course**. This course can be one of Agricultural Economics' Capstone Courses (AGEC 41100, 42700, 43000, 43100, or 49900) or any approved College of Agriculture capstone course.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.



- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- MA 16010 - Applied Calculus I ♦
- AGECE Biological Sciences Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- AGECE 20201 - Introduction To Data Analytics For Agricultural Business
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGECE Biological Sciences Selective - Credit Hours: 4.00
- Oral Communication Selective - Credit Hours: 3.00
- Science, Technology, & Society Selective - Credit Hours: 3.00

### 16 Credits

### Fall 2nd Year

- AGECE 22000 - Economics Of Agricultural Markets
- AGECE 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- STAT 30100 - Elementary Statistical Methods ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

### 16 Credits

### Spring 2nd Year

- CHM 11200 - General Chemistry ♦
- MGMT 20000 - Introductory Accounting ♦ or

- MGMT 21200 - Business Accounting ♦
- Agricultural Economics Selective (AGEC 10000:59900) - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective - Credit Hours: 3.00

## 15 Credits

### Fall 3rd Year

- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics
- Agricultural Economics Selective (AGEC 10000:59900) - Credit Hours: 3.00
- AGEC Economics Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- AGEC Mathematics or Science Selective - Credit Hours: 3.00
- Agricultural Economics Selective (AGEC 10000:59900) - Credit Hours: 6.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- Agricultural Economics Selective (AGEC 10000:59900) - Credit Hours: 3.00
- AGEC Economics Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 6.00

## 15 Credits

### Spring 4th Year

- Agricultural Economics Selective (AGEC 10000:59900) - Credit Hours: 3.00
- AGEC Economics Selective - Credit Hours: 3.00
- Electives - Credit Hours: 7.00-8.00

## 13-14 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agricultural Economics: Data Analytics Concentration, BS**

### About the Program

Students completing a degree in Agricultural Economics must choose a concentration from four choices: Applied Agricultural Economics, Data Analytics, Policy and Pre-Law, and Quantitative Analysis. The Data Analytics concentration requires students to complete courses in optimization, econometrics, and data analysis and applications. With a growing demand for individuals who understand data, there are numerous career opportunities across a vast number of industries.

[Agricultural Economics \(website\)](#)

[Agricultural Economics Major Change \(CODO\) Requirements](#)

### Degree Requirements

## **120 Credits Required**

## Departmental/Program Major Courses (54 credits)

### Required Major Courses (13 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGEC 21700 - Economics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar

### Data Analytics Concentration Courses (24 credits)

- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- AGEC 37500 - The Process Of Economic Research
- AGEC 45100 - Applied Econometrics
- AGR 33300 - Data Science For Agriculture
- AGEC 42900 - Agri-Marketing Analytics or
- AGEC 49900 - Thesis (Capstone) - Credit Hours: 3.00
- Data Analytics Concentration Selectives - Credit Hours: 11.00 (no more than 3 credits from CS courses)

### AGEC Departmental Selectives (17 credits)

- AGEC Biological Science Selective - Credit Hours: 8.00 (see list in supplemental)
- AGEC Economics Selective - Credit Hours: 6.00 (see list in supplemental) (meets CoA Upper level Humanities/Social Science requirement)
- AGEC Mathematics or Science Selective - Credit Hours: 3.00

#### AGEC Department Supplemental Information

### Other Departmental/Program Course Requirements (43 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I ♦ (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology & Society Selective - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)

- Written Communication Selective - Credit Hours: 3.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (23 credits)

- Elective - Credit Hours: 23.00

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)

- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Program Requirements

### Fall 1st Year

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness ♦
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- MA 16010 - Applied Calculus I
- AGEC Biological Science Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00

### 14 Credits

### Spring 1st Year

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 21700 - Economics
- AGEC Biological Sciences Selective - Credit Hours: 4.00

- Oral Communication Selective - Credit Hours: 3.00
- Science, Technology, & Society Selective - Credit Hours: 3.00

## 16 Credits

### Fall 2nd Year

- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- STAT 30100 - Elementary Statistical Methods ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- AGEC 37500 - The Process Of Economic Research
- AGEC 45100 - Applied Econometrics
- AGR 33300 - Data Science For Agriculture
- CHM 11200 - General Chemistry ♦
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Written or Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

### Fall 3rd Year

- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- Data Analytics Concentration Selective - Credit Hours: 5.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 14 Credits

### Spring 3rd Year

- AGEC 42900 - Agri-Marketing Analytics  
or
- AGEC 49900 - Thesis - Credit Hours: 3.00
- Data Analytics Concentration Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- AGEC Economics Selective - Credit Hours: 3.00
- Data Analytics Concentration Selective - Credit Hours: 3.00
- Mathematics or Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 6.00

## 15 Credits

### Spring 4th Year

- AGEC Economics Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 8.00

## 14 Credits

## Notes

- 2.0 GPA required for Bachelor of Science degree.
- Consultation with an advisor may result in an altered plan customized for an individual student.

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer



The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agricultural Economics: Policy and Pre-Law Concentration, BS**

### About the Program

Students completing a degree in Agricultural Economics must choose a concentration from four choices: Applied Agricultural Economics, Data Analytics, Policy and Pre-Law, and Quantitative Analysis. The Policy and Pre-Law concentration requires students to complete the Undergraduate Honors Program, and courses in agricultural policy, law, and advanced economic theory. Many of these students complete internships and then full-time positions in Washington D.C., local and state government offices and commodity groups, etc.

[Agricultural Economics Website](#)

[Agricultural Economics Major Change \(CODO\) Requirements](#)

### Degree Requirements

## **120 Credits Required**

### Departmental/Program Major Courses (52 credits)

#### Major Required Courses (13 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar

#### Policy and Pre-Law Concentration Courses (24 credits)

- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics

- AGEC 37500 - The Process Of Economic Research
- AGEC 40600 - Natural Resource And Environmental Economics
- AGEC 41000 - Agricultural Policy
- AGEC 49900 - Thesis (Capstone)
- AGEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- Policy and Pre-Law Concentration Selectives - Credit Hours: 6.00

## AGEC Departmental Selectives (17 credits)

- AGEC Biological Science Selective - Credit Hours: 8.00
- AGEC Economics Selective - Credit Hours: 6.00 (meets CoA Upper level Humanites/Social Science requirement)
- AGEC Mathematics or Science Selective - Credit Hours: 3.00

### AGEC - Agricultural Economics Department Supplemental Information

## Other Departmental/Program Course Requirements (43 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I ♦(satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology & Society Selective - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (23 credits)

- Electives - Credit Hours: 23.00

## Supplemental List

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- Students **must complete a College of Agriculture capstone course**. This course can be one of Agricultural Economics' Capstone Courses (AGEC 41100, 42700, 43000, 43100, or 49900) or any approved College of Agriculture capstone course.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

# Program Requirements

## Fall 1st Year

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- MA 16010 - Applied Calculus I ♦
- AGEC Biological Sciences Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00

## 14 Credits

## Spring 1st Year

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 21700 - Economics
- AGEC Biological Sciences Selective - Credit Hours: 4.00
- Oral Communication Selective - Credit Hours: 3.00
- Science, Technology, & Society Selective - Credit Hours: 3.00

## 16 Credits

## Fall 2nd Year

- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- STAT 30100 - Elementary Statistical Methods ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

## Spring 2nd Year

- AGEC 37500 - The Process Of Economic Research
- CHM 11200 - General Chemistry ♦
- MGMT 20000 - Introductory Accounting ♦ or
- Elective - Credit Hours: 3.00
- MGMT 21200 - Business Accounting ♦
- Policy and Pre-Law Concentration Selective - Credit Hours: 3.00
- Written or Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

## Fall 3rd Year

- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics
- AGEC 40600 - Natural Resource And Environmental Economics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- AGEC 49900 - Thesis - Credit Hours: 2.00

14 Credits

## Spring 3rd Year

- AGEC 41000 - Agricultural Policy
- AGEC 49900 - Thesis - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

15 Credits

## Fall 4th Year

- MGMT 45500 - Legal Background For Business I  
or
- AGEC Economics Selective - Credit Hours: 3.00
- Policy and Pre-Law Concentration Selectives - Credit Hours: 3.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 3.00
- AGEC 45500 - Agricultural Law

15 Credits

## Spring 4th Year

- Agricultural Economics Selective (AGEC 10000:59900) - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+level) - Credit Hours: 3.00
- Electives - Credit Hours: 8.00

14 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

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The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agricultural Economics: Quantitative Analysis Concentration, BS**

### About the Program

Students completing a degree in Agricultural Economics must choose a concentration from three choices: Applied Agricultural Economics, Commodity Marketing, and Quantitative Analysis. The Quantitative Analysis concentration requires students to complete the Undergraduate Honors Program, and courses in optimization, econometrics, advanced economic theory, and math for applied economics.

Students are prepared to apply economic principles and use quantitative tool to analyze data which assists the agricultural sector in making better decisions. These decisions involve a wide array of issues including price analysis, international development, international trade, environmental resources, and agricultural policy.

[Agricultural Economics Website](#)

[Agricultural Economics Major Change \(CODO\) Requirements](#)

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (54 credits)

### Required Major Courses (13 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar

### Quantitative Analysis Concentration Courses (21 credits)

- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- AGEC 37500 - The Process Of Economic Research
- AGEC 45100 - Applied Econometrics
- AGEC 49900 - Thesis (Capstone) - Credit Hours: 5.00
- AGEC 51600 - Mathematical Tools For Agricultural And Applied Economics
- ECON 34000 - Intermediate Microeconomic Theory
- MA 16020 - Applied Calculus II

### AGEC Departmental Selectives (20 credits)

- AGEC Biological Science Selective - Credit Hours: 8.00 (see list in supplemental)
- AGEC Economics Selective (used to meet the CoA Humanities/Social Science 30000+ level requirement) - Credit Hours: 12.00 (see list in supplemental)

Agricultural Economics Department Supplemental Information

### Other Departmental/Program Course Requirements (43-44 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)

- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology & Society Selective - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (22-23 credits)

Elective - Credit Hours: 22.00-23.00

## Supplemental List

- Agricultural Economics Department Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- Students **must complete a College of Agriculture capstone course**. This course can be one of Agricultural Economics' Capstone Courses (AGEC 41100, 42700, 43000, 43100, or 49900) or any approved College of Agriculture capstone course.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00



- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or

- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- AGECEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- MA 16010 - Applied Calculus I
- AGECEC Biological Science Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- AGECEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGECEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- MA 16020 - Applied Calculus II
- AGECEC Biological Sciences Selective - Credit Hours: 4.00
- Oral Communication Selective - Credit Hours: 3.00

### 16 Credits

### Fall 2nd Year

- AGECEC 22000 - Economics Of Agricultural Markets
- AGECEC 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- STAT 30100 - Elementary Statistical Methods ♦

- Science, Technology, & Society Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- AGEC 37500 - The Process Of Economic Research
- AGEC 45100 - Applied Econometrics
- CHM 11200 - General Chemistry ♦
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- AGEC Economics Selective - Credit Hours: 3.00
- Written or Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

### Fall 3rd Year

- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- AGEC 49900 - Thesis - Credit Hours: 2.00
- AGEC Economics Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 14 Credits

### Spring 3rd Year

- AGEC 49900 - Thesis - Credit Hours: 2.00
- AGEC Economics Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 14 Credits

### Fall 4th Year

- AGEC 49900 - Thesis - Credit Hours: 1.00
- AGEC 51600 - Mathematical Tools For Agricultural And Applied Economics
- ECON 34000 - Intermediate Microeconomic Theory
- Humanities or Social Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 6.00

16 Credits

## Spring 4th Year

- AGEC Economics Selective - Credit Hours: 3.00
- Electives - Credit Hours: 10.00-11.00

13-14 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Farm Management, BS**

### About the Program

Farm Management prepares people for managing the home farm, professional farm management, or understanding the challenge of managing a farm. Emphasis is placed on production, finance, marketing, and management strategies.

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (61 credits)

### Required Major Courses (29 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Sciences for core) or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- AGEC 31000 - Farm Organization
- AGEC 32100 - Principles Of Commodity Marketing
- AGEC 41100 - Farm Management (Capstone)
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics

### Major Selectives (18 credits)

- Farm Management Business Selective - Credit Hours: 3.00
- Farm Management Business Selective - Credit Hours: 3.00
- Farm Management Business Selective - Credit Hours: 3.00
- Production Agriculture Selective - Credit Hours: 3.00
- Production Agriculture Selective - Credit Hours: 3.00
- Production Agriculture Selective - Credit Hours: 3.00

Farm Management Supplemental Information

### AGEC Department Selectives (14 credits)

- AGEC Biological Science Selective - Credit Hours: 8.00
- AGEC Economics Selective (meets CoA Upper level Humanities/Social Science requirement) - Credit Hours: 3.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00

Agricultural Economics Department Supplemental Information

## Other Departmental /Program Course Requirements (43-44 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I ♦(satisfies Quantitative Reasoning for core)
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology & Society Selective - Credit Hours: 3.00 (satisfies Science, Technology & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (15-16 credits)

- Electives - Credit Hours: 15.00-16.00

## Supplemental List

- Farm Management Supplemental Information

## Grade Requirements

- *Clearly list any/all grade requirements within the program.*

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- *Double-counting policy - where is it allowed and not allowed; specific notes or requirements about courses; repeatable limits, study abroad, etc.*

## Non-course / Non-credit Requirements

- *Degree requirements which are not associated to a course. For example: portfolio, work experience, certifications. Should equal 0 credits.*

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- *College, department, major transfer credit (including any/all undistributed credit, TR graded course, AP/IB credit, etc.) should be clearly stated. Can transfer credit be applied to the major? If yes, how and where?*

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Additional Information

- *Any additional information that does not fit into any of the categories above.*

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- AGECEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- CHM 11100 - General Chemistry ♦



- Elective - Credit Hours: 3.00
- MA 16010 - Applied Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

## 16-17 Credits

### Spring 1st Year

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- CHM 11200 - General Chemistry ♦
- Science, Technology, & Society Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00

## 15 Credits

### Fall 2nd Year

- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- STAT 30100 - Elementary Statistical Methods ♦
- AGEC Biological Science Selective - Credit Hours: 4.00
- Production Agriculture Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

## 15 Credits

### Spring 2nd Year

- AGEC 31000 - Farm Organization
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- AGEC Biological Science Selective - Credit Hours: 4.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written or Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

### Fall 3rd Year

- AGEC 32100 - Principles Of Commodity Marketing
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics

- Farm Management Business Selective - Credit Hours: 3.00
- Humanities and Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- AGEC Economics Selective - Credit Hours: 3.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00
- Farm Management Business Selective - Credit Hours: 3.00
- Production Agriculture Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- AGEC 41100 - Farm Management
- Written or Oral Communication Selective - Credit Hours: 3.00
- AGEC 42400 - Financial Management Of Agricultural Business
- Production Agriculture Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+level) - Credit Hours: 3.00

## 16 Credits

### Spring 4th Year

- Farm Management Business Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 5.00-6.00

## 11-12 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

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## Sales and Marketing, BS

### About the Program

Sales and marketing graduates complete a degree program with a focus in sales, marketing, and management that give them the ability to enter numerous entry-level sales positions for agricultural and non-agricultural firms. These positions lead to professional careers in sales or marketing management. A wide spectrum of agricultural marketing organizations, food manufacturing companies, and farm supply industries are marketing-oriented and depend extensively on agricultural graduates who are well-trained in marketing tools and concepts.

[Agricultural Economics Website](#)

[Sales and Marketing Major Change \(CODO\) Requirements](#)

### Degree Requirements

## 120 Credits Required

### Departmental/Program Major Courses (55 credits)

#### Required Major Courses (38 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics

- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 29800 - Sophomore Seminar
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 33100 - Principles Of Industrial Selling
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 42700 - Advanced Agribusiness Marketing (Capstone)
- AGEC 43000 - Agricultural And Food Business Strategy (Capstone)
- AGEC 43100 - Advanced Industrial Sales And Marketing (Capstone)
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics

### Communication Marketing Selective (3 credits)

- COM 21200 - Approaches To The Study Of Interpersonal Communication
- COM 25300 - Introduction To Public Relations
- COM 25600 - Introduction To Advertising
- COM 31800 - Principles Of Persuasion
- COM 32000 - Small Group Communication
- COM 32400 - Introduction To Organizational Communication
- COM 32500 - Interviewing: Principles And Practice

### AGEC Department Selectives (14 credits)

- AGEC Biological Science Selective - Credit Hours: 8.00
- AGEC Economics Selective (meets CoA Upper level Humanities/Social Science requirement) - Credit Hours: 3.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00

Agricultural Economics Department Supplemental Information

### Other Departmental /Program Course Requirements (46-47 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MGMT 45500 - Legal Background For Business I
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

- Humanities or Social Science Selective - Credit Hours: 3.00
- Science, Technology and Society Selective - Credit Hours: 3.00 (satisfies Science, Technology and Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective - Credit Hours: 3.00
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (18-19 credits)

- Elective - Credit Hours: 18.00-19.00

## Supplemental List

- Agricultural Economics Department Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- *College, department, major transfer credit (including any/all undistributed credit, TR graded course, AP/IB credit, etc.) should be clearly stated. Can transfer credit be applied to the major? If yes, how and where?*

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.

- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11200 - Introduction To Agricultural Economics Academic Programs
- MA 16010 - Applied Calculus I
- AGECE Biological Sciences Selective - Credit Hours: 4.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- AGECE 20201 - Introduction To Data Analytics For Agricultural Business
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25200 - Macroeconomics
- AGECE Biological Sciences Selective - Credit Hours: 4.00
- Science, Technology, & Society Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00

### 16 Credits

### Fall 2nd Year

- AGECE 22000 - Economics Of Agricultural Markets
- AGECE 29800 - Sophomore Seminar
- CHM 11100 - General Chemistry ♦
- STAT 30100 - Elementary Statistical Methods ♦
- Communication Marketing Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

### 16 Credits

### Spring 2nd Year

- AGECE 33000 - Management Methods For Agricultural Business
- AGECE 33100 - Principles Of Industrial Selling

- CHM 11200 - General Chemistry ♦
- MGMT 20000 - Introductory Accounting ♦ or
- MGMT 21200 - Business Accounting ♦
- Humanities or Social Science Selective - Credit Hours: 3.00

## 15 Credits

### Fall 3rd Year

- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 35200 - Quantitative Techniques For Firm Decision Making or
- AGEC 45100 - Applied Econometrics
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- MGMT 45500 - Legal Background For Business I
- AGEC Economics Selective - Credit Hours: 3.00
- AGEC Mathematics or Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- AGEC 42700 - Advanced Agribusiness Marketing
- AGEC 43100 - Advanced Industrial Sales And Marketing  
Written or Oral Communication Selective - Credit Hours: 3.00
- Electives - Credit Hours: 6.00

## 16 Credits

### Spring 4th Year

- AGEC 43000 - Agricultural And Food Business Strategy
- Humanities or Social Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 6.00-7.00

## 13 Credits



## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

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## Certificate

### Industrial Selling Certificate

The Certificate in Industrial Selling is open to students in any major who are interested in Industrial Selling.

It has three required courses and a capstone course, totaling thirteen credit hours. Each certificate earner must also complete a day long industry sales experience with a B2B sales practitioner in their area of professional interest, and must participate in a sales or marketing oriented experience on campus. It is expected that additional courses (sales management, negotiations, etc.) will be developed over time as alternatives and complements to this set of initial courses.

### Requirements for the Certificate (13 credits)

#### Required Courses (9 credits)

- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33100 - Principles Of Industrial Selling

- CSR 31500 - Relationship Selling

## Capstone Course (4 credits)

- AGEC 43100 - Advanced Industrial Sales And Marketing

## Prerequisite Information

For current pre-requisites for courses, click [here](#).

## Disclaimer

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The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Minor

### Farm Management Minor

#### Requirements for the Minor (18 credits)

##### Required Courses (13 credits)

- AGEC 31000 - Farm Organization
- AGEC 41100 - Farm Management
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting

##### Selective Courses (5 credits)

- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 30500 - Agricultural Prices
- AGEC 32100 - Principles Of Commodity Marketing
- AGEC 33100 - Principles Of Industrial Selling
- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- AGEC 41000 - Agricultural Policy
- AGEC 41200 - Farm Business Management Workshop
- AGEC 42100 - Advanced Commodity Marketing
- AGEC 42400 - Financial Management Of Agricultural Business

- AGEC 42500 - Estate Planning And Property Transfer
- AGEC 45600 - Federal Income Tax Law
- AGEC 45000 - International Agricultural Trade
- AGEC 52400 - Agricultural Finance
- AGEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- MGMT 44301 - Management Of Human Resources or
- MGMT 44362 - Leadership In A Changing World or
- TLI 11200 - Foundations Of Organizational Leadership or
- TLI 15200 - Business Principles For Organizational Leadership

## Notes

- Department permission is not required to enroll in this minor.
- The required 18 credits are beyond the three-credit economics selective that is a part of core requirements for students in the College of Agriculture. For students from programs outside of the College of Agriculture, three credits of an economics selective are required in addition to the 18 credits noted above.

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Food and Agribusiness Management Minor

### Requirements for the Minor (18 credits)

#### Required Courses (9 credits)

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- AGEC 33000 - Management Methods For Agricultural Business or
- MGMT 20100 - Management Accounting I
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting

#### Selective Courses (9 credits)

*Agricultural Economics (AGEC) courses - At least 6 credits*

- AGEC 30500 - Agricultural Prices
- AGEC 32100 - Principles Of Commodity Marketing

- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33100 - Principles Of Industrial Selling
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- AGEC 41000 - Agricultural Policy
- AGEC 42100 - Advanced Commodity Marketing
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 42700 - Advanced Agribusiness Marketing
- AGEC 43000 - Agricultural And Food Business Strategy
- AGEC 43100 - Advanced Industrial Sales And Marketing
- AGEC 45000 - International Agricultural Trade
- AGEC 45100 - Applied Econometrics
- AGEC 52400 - Agricultural Finance
- HORT 43500 - Developing An Agricultural Startup
- AGEC 45500 - Agricultural Law or
- MGMT 45500 - Legal Background For Business I
- MGMT 44301 - Management Of Human Resources or
- MGMT 44362 - Leadership In A Changing World or
- TLI 11200 - Foundations Of Organizational Leadership or
- TLI 15200 - Business Principles For Organizational Leadership
- MGMT Courses (20000-59900) - Credit Hours: 3.00
- OLS Courses (20000-59900) - Credit Hours: 3.00

## Notes

- Department permission is not required to enroll in this minor.

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Global Food and Agriculture Systems Minor**

### **About this Program:**

This minor will provide students a course of study emphasizing the global development, policy, and sustainability of the food and agribusiness industry.

### **Requirements for the Minor (18 credits)**

#### **Required Courses (6 credits)**

- AGEC 22000 - Economics Of Agricultural Markets or
- ECON 34000 - Intermediate Microeconomic Theory
- AGEC 21700 - Economics or
- ECON 25200 - Macroeconomics

### Additional Courses - Choose Four (12 credits)

- AGEC 25000 - Economic Geography Of World Food And Resources
- AGEC 30500 - Agricultural Prices
- AGEC 32100 - Principles Of Commodity Marketing
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 34000 - International Economic Development
- AGEC 40600 - Natural Resource And Environmental Economics
- AGEC 41000 - Agricultural Policy
- AGEC 42100 - Advanced Commodity Marketing
- AGEC 45000 - International Agricultural Trade
- AGEC 52600 - International Food And Agribusiness Marketing Strategy
- AGEC 53200 - World Food Problems

### Notes

- Department Permission is not required to enroll in this minor.

### Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Program Information

### Agricultural Economics Department Supplemental Information

#### College of Agriculture: Biological Science Selective (8 credits)

*To fulfill the biological sciences core requirement, all students must complete at least two hours of laboratory credit in biological sciences each week for 32 weeks, or equivalent. Completion of course sequences is recommended. Courses with an (\*) have a laboratory component.*

- BIOL 11000 - Fundamentals Of Biology I \*
- BIOL 11100 - Fundamentals Of Biology II \*
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms

- BIOL 13500 - First Year Biology Laboratory \*
- BIOL 20300 - Human Anatomy And Physiology \*
- BIOL 20400 - Human Anatomy And Physiology \*
- BIOL 22100 - Introduction To Microbiology \*
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function \*
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology \*
- BIOL 29500 - Special Assignments (Title: Quantitative Biology of the Living Cell)
- BTNY 11000 - Introduction To Plant Science \*
- BTNY 12000 - Principles Of Plant Biology I
- BTNY 12100 - Principles Of Plant Biology II
- HORT 30100 - Plant Physiology \*

## AGEC Economics Selective (3 Credits)

- AGEC 30500 - Agricultural Prices
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 34000 - International Economic Development
- AGEC 45000 - International Agricultural Trade
- AGEC 40600 - Natural Resource And Environmental Economics
- AGEC 41000 - Agricultural Policy
- ECON 30000:59999

## AGEC Food and Agribusiness Management Selective (3 Credits)

- AGEC 31000 - Farm Organization
- AGEC 32100 - Principles Of Commodity Marketing
- AGEC 33100 - Principles Of Industrial Selling
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 41100 - Farm Management
- AGEC 41200 - Farm Business Management Workshop
- AGEC 42100 - Advanced Commodity Marketing
- AGEC 42500 - Estate Planning And Property Transfer
- AGEC 42700 - Advanced Agribusiness Marketing
- AGEC 42900 - Agri-Marketing Analytics
- AGEC 43000 - Agricultural And Food Business Strategy
- AGEC 43100 - Advanced Industrial Sales And Marketing
- AGEC 45500 - Agricultural Law
- AGEC 45600 - Federal Income Tax Law
- AGEC 52400 - Agricultural Finance
- AGEC 52600 - International Food And Agribusiness Marketing Strategy

- CSR 20900 - Introduction To Retail Management
- CSR 28200 - Customer Relations Management
- CSR 30900 - Leadership Strategies
- CSR 31500 - Relationship Selling
- CSR 33100 - Consumer Behavior
- CSR 33200 - Cross-Cultural Marketing And International Retailing
- CSR 34200 - Personal Finance
- CSR 34400 - Fundamentals Of Negotiations
- CSR 38600 - Risk Management
- CSR 40400 - Strategic Issues For Sales And Retailing
- CSR 41500 - Sales Force Management
- CSR 48100 - Ethics And Compliance In Financial Counseling And Planning
- HORT 43500 - Developing An Agricultural Startup
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership
- ENTR 20000:59999
- MGMT 20100:59999
- IET 20000:59999
- OBHR 20000:59999
- OLS 25200:59999
- TLI 20000:59999

## College of Agriculture: Additional Mathematics or Science Selectives

- AGR 33300 - Data Science For Agriculture
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 45100 - Applied Econometrics
- AGRY 12500 - Environmental Science And Conservation
- AGRY 25500 - Soil Science
- AGRY 27000 - Forest Soils
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 46500 - Soil Physical Properties
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- BCHM 10000 - Introduction To Biochemistry
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution

- BTNY 11000 - Introduction To Plant Science
- BTNY 26200 - Plant Structure And Tissue Biology
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 53500 - Plant Disease Epidemiology
- CHM 22400 - Introductory Quantitative Analysis
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- CHM 26100 - Organic Chemistry I
- CHM 26200 - Organic Chemistry II
- CHM 26300 - Organic Chemistry Laboratory I
- CHM 26400 - Organic Chemistry Laboratory II
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- CS 18000 - Problem Solving And Object-Oriented Programming
- EAPS 11100 - Physical Geology
- EAPS 11200 - Earth Through Time
- EAPS 12500 - Environmental Science And Conservation
- EAPS 22100 - Survey Of Atmospheric Science
- ENTM 10200 - The Practice Of Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior
- ENTM 24200 - Data Science
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 30100 - Experimentation And Analysis
- ENTM 31200 - Plant-Insect Chemical Ecology
- ENTM 32810 - Practical Molecular Biology
- ENTM 35300 - Insecticides And Environment
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 12500 - Environmental Science And Conservation
- FNR 20100 - Marine Biology
- FNR 23000 - The World's Forests And Society
- FNR 24000 - Wildlife In America
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 30500 - Conservation Genetics
- FNR 35700 - Fundamental Remote Sensing
- HONR 49900 - Honors Research Project (Title: Human Diseases and Disorders)
- HORT 10100 - Fundamentals Of Horticulture
- HORT 30100 - Plant Physiology
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus



- MA 26500 - Linear Algebra
- NRES 12500 - Environmental Science And Conservation
- NRES 23000 - Survey Of Meteorology
- NRES 25500 - Soil Science
- PHYS 17200 - Modern Mechanics
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- PHYS 23300 - Physics For Life Sciences I
- PHYS 23400 - Physics For Life Sciences II
- PHYS 24100 - Electricity And Optics
- STAT 22500 - Introduction To Probability Models
- STAT 50200 - Experimental Statistics II
- STAT 51100 - Statistical Methods
- STAT 51200 - Applied Regression Analysis

## Data Analytics Concentration Selectives (11 credits)

*(No more than 3 credits from CS course)*

- AGECE 30500 - Agricultural Prices
- AGECE 42900 - Agri-Marketing Analytics
- ENTM 24200 - Data Science
- CS 10100 - Digital Literacy
- CS 15900 - C Programming
- CS 17700 - Programming With Multimedia Objects
- HORT 53000 - Introduction To Computing For Biologists
- ILS 23000 - Data Science And Society: Ethical Legal Social Issues
- ILS 29500 - Special Topics In Information And Data Science
- MGMT 28800 - Programming For Business Applications
- MGMT 47300 - Data Mining
- MGMT 47400 - Predictive Analytics
- MGMT 47900 - Data Visualization
- PHIL 20700 - Ethics For Technology, Engineering, And Design
- PHIL 20800 - Ethics Of Data Science

## Policy & Pre-Law Concentration Selectives (6 credits)

- AGECE 45000 - International Agricultural Trade
- AGECE 45600 - Federal Income Tax Law
- AGECE 49800 - Special Problems
- AGECE 52500 - Environmental Policy Analysis
- COM 35200 - Mass Communication Law
- COM 21000 - Addressing Public Issues
- ECON 36100 - Antitrust And Regulation
- ECON 36700 - Law And Economics
- ECON 42200 - Public Finance And Taxation

- FS 34000 - Introduction To Food Law And Regulations
- MGMT 33100 - Development And Impact of Equal Employment Law
- MGMT 45600 - Legal Foundations For Business II
- PHIL 11000 - The Big Questions: Introduction To Philosophy
- PHIL 11400 - Global Moral Issues
- PHIL 12000 - Critical Thinking
- PHIL 15000 - Principles Of Logic
- POL 22200 - Women, Politics, And Public Policy
- POL 22300 - Introduction To Environmental Policy
- POL 31400 - The President And Policy Process
- PHIL 26000 - Philosophy And Law
- POL 36000 - Women And The Law
- POL 42300 - International Environmental Policy
- POL 42500 - Environmental Law And Politics
- POL 43500 - International Law
- SOC 41900 - Sociology Of Law

## **Farm Management Supplemental Information**

### **College of Agriculture: Biological Science Selective (8 credits)**

*To fulfill the biological sciences core requirement, all students must complete at least two hours of laboratory credit in biological sciences each week for 32 weeks, or equivalent. Completion of course sequences is recommended. Courses with an (\*) have a laboratory component.*

- BIOL 11000 - Fundamentals Of Biology I \*
- BIOL 11100 - Fundamentals Of Biology II \*
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First Year Biology Laboratory \*
- BIOL 20300 - Human Anatomy And Physiology \*
- BIOL 20400 - Human Anatomy And Physiology \*
- BIOL 22100 - Introduction To Microbiology \*
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function \*
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology \*
- BIOL 29500 - Special Assignments (Title: Quantitative Biology of the Living Cell)
- BTNY 11000 - Introduction To Plant Science \*
- BTNY 12000 - Principles Of Plant Biology I
- BTNY 12100 - Principles Of Plant Biology II
- HORT 30100 - Plant Physiology \*

### **Economics Selective (3 Credits)**

- ECON 30000:59999

- AGEC 30500 - Agricultural Prices
- AGEC 34000 - International Economic Development
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 40600 - Natural Resource And Environmental Economics
- AGEC 41000 - Agricultural Policy
- AGEC 45000 - International Agricultural Trade

## Farm Management Business Selective (9 Credits)

- ENTR 20000:59999
- IET 20000:59999
- MGMT 20100:59999
- OBHR 20000:59999
- OLS 20000:59999
- TLI 20000:59999
- AGEC 28900 - Foundational Internship
- AGEC 30500 - Agricultural Prices
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 33100 - Principles Of Industrial Selling
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 41000 - Agricultural Policy
- AGEC 41200 - Farm Business Management Workshop
- AGEC 42100 - Advanced Commodity Marketing
- AGEC 42500 - Estate Planning And Property Transfer
- AGEC 42700 - Advanced Agribusiness Marketing
- AGEC 43000 - Agricultural And Food Business Strategy
- AGEC 45500 - Agricultural Law
- AGEC 45600 - Federal Income Tax Law
- AGEC 52400 - Agricultural Finance
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership

## Production Agriculture Selective (9 Credits)

- AGRY 10500 - Crop Production
- AGRY 25500 - Soil Science
- AGRY 32000 - Genetics
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 37500 - Crop Production Systems
- AGRY 50500 - Forage Management
- AGRY 51000 - Turfgrass Science
- AGRY 51200 - Integrated Turfgrass Systems
- AGRY 52500 - Crop Physiology And Ecology
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals

- ANSC 24000 - Principles Of Animal Production
- ANSC 25500 - Principles Of Animal Products
- ANSC 32500 - Applied Ruminant Nutrition
- ANSC 32600 - Applied Non-ruminant Nutrition
- ANSC 35100 - Meat Science
- ANSC 42500 - Ruminant Reproductive Farm Management
- ANSC 42600 - Non-ruminant Reproductive Farm Management
- ANSC 44100 - Beef Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management
- ASM 10400 - Introduction To Agricultural Systems
- ASM 20100 - Construction And Maintenance
- ASM 22200 - Crop Production Equipment
- ASM 23600 - Environmental Systems Management
- ASM 24500 - Materials Handling And Processing
- ASM 33300 - Facilities Planning And Management
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 35300 - Insecticides And Environment
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- HORT 20100 - Plant Propagation
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 21100 - Fundamentals Of Turfgrass Culture Laboratory
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 55100 - Plant Responses To The Environment
- SFS 21000 - Small Farm Experience I
- SFS 21100 - Small Farm Experience II
- SFS 30100 - Agroecology

## **Department of Agricultural Sciences Education and Communication**

### **Overview**

Welcome to the Department of Agricultural Sciences Education and Communication at Purdue University. The department's motto is "Empower, Educate, and Enhance."

These three very powerful words clearly and succinctly identify the purposes of the department. Empowering, Educating and Enhancing is accomplished by this interdisciplinary department with undergraduate programs in

Agricultural Education and Agricultural Communication and a nationally recognized graduate program focused on learning and communication in the context of agriculture.

## **Department of Agricultural Sciences Education and Communication (website)**

### **Faculty (website)**

## **Contact Information**

Agricultural Sciences Education and Communication

Purdue University  
Lilly Hall of Life Sciences (LILY)  
915 West State Street  
West Lafayette, IN 47907  
Phone: (765) 494-8423

Main Office: Lilly Hall of Life Sciences (LILY) 3rd Floor, Room 3-230  
Email: [asec@lists.purdue.edu](mailto:asec@lists.purdue.edu)

Questions:

Mark Tucker [matucker@purdue.edu](mailto:matucker@purdue.edu)

Phone: (765) 494-8429

## **Graduate Information**

For Graduate Information please see Agricultural Sciences Education and Communication Graduate Program Information .

## **Baccalaureate**

## **Agricultural Communication, BS**

### **About the Program**

Prepare for a professional career serving industry and society by promoting awareness and understanding of food, agriculture, natural resources and science. In Agricultural Communication, you will receive excellent advising from caring staff. You will develop marketable communication skills through a flexible curriculum, diverse coursework and competitive internships. Our graduates are professional communicators for agricultural organizations, agribusiness firms, government, mass media, and advertising and public relations agencies.

[Agricultural Communication Website](#)

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (24 credits)

### Required Major Courses (24 credits)

- ASEC 15200 - Agricultural Communication Seminar
- ASEC 28000 - Digital Storytelling
- ASEC 38000 - Feature Writing And Production
- ASEC 48000 - Agricultural Communication Capstone Seminar
- COM 20400 - Critical Perspectives On Communication ♦
- COM 25200 - Writing For Mass Media ♦
- COM 31100 - Copy Editing ♦
- COM 31800 - Principles Of Persuasion ♦

## Other Departmental/Program Course Requirements (86-90 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12100 - Introduction To Agricultural Sciences Education And Communication Academic Programs
- AGR 20100 - Communicating Across Culture
- CHM 11100 - General Chemistry (satisfies Science #1 for core) or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry (satisfies Science #2 for core) or
- CHM 11600 - General Chemistry
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core) or
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)  
**Communication or Agriculture Communication Selective - Credit Hours: 11.00**
- ASEC 28500 - Introduction To Publication Design
- ASEC 49100 - Special Topics In Agricultural Science And Education Communication - *Titles: AG Publication Design; AGCM Internship; Interactive WEB Strat for AG; Multimedia in AG Comm*
- COM 10000:59999  
Economics Selective - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics  
**Communication or Agriculture Communication Selective (30000+ level) - Credit Hours: 3.00**

- ASEC 30000:59999
- COM 30000:59999
- Agricultural Selective - Credit Hours: 15.00
- Agricultural Selective (30000+ level) - Credit Hours: 6.00
- Biological Science Selective - Credit Hours: 4.00
- Biological Science Selective - Credit Hours: 4.00
- Mathematics or Science Selective - Credit Hours: 3.00-5.00 (4 or 5 credits may be needed if a 1 or 2 credit STS is taken)
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Science, Technology and Society - Credit Hours: 1.00-3.00 (satisfies Science, Technology, & Society for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## Electives (6-10 credits)

- Electives - Credits Hours: 6.00-10.00

## Supplemental List

[Click here for Agricultural Communication Supplemental Information](#)

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

[College of Agriculture Undergraduate Pass/No Pass Policy](#)

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00

- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or



- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12100 - Introduction To Agricultural Sciences Education And Communication Academic Programs
- ASEC 15200 - Agricultural Communication Seminar
- Biological Science Selective - Credit Hours: 4.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- MA 15800 - Precalculus - Functions And Trigonometry or
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Agricultural Selective - Credit Hours: 3.00
- Economics Selective - Credit Hours: 3.00
- Biological Science Selective - Credit Hours: 4.00
- Oral Communication Selective - Credit Hours: 3.00

### 16-17 Credits

### Fall 2nd Year

- AGR 20100 - Communicating Across Culture
- CHM 11100 - General Chemistry or
- CHM 11500 - General Chemistry
- COM 20400 - Critical Perspectives On Communication
- Agricultural Selective - Credit Hours: 3.00

- Science, Technology, & Society Selective - Credit Hours: 1.00-3.00

## 14-16 Credits

### Spring 2nd Year

- ASEC 28000 - Digital Storytelling
- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry
- COM 31800 - Principles Of Persuasion
- Communication or Agricultural Communication Selective - Credit Hours: 3.00
- Mathematics or Science Selective - Credit Hours: 3.00-5.00

## 16-18 Credits

### Fall 3rd Year

- COM 25200 - Writing For Mass Media ♦
- STAT 30100 - Elementary Statistical Methods
- Agricultural Selective - Credit Hours: 6.00
- Communication or Agricultural Communication Selective - Credit Hours: 2.00

## 14 Credits

### Spring 3rd Year

- ASEC 38000 - Feature Writing And Production
- Agricultural Selective (30000+ Level) - Credit Hours: 3.00
- Communication or Agricultural Communication Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-3.00

## 13-15 Credits

### Fall 4th Year

- COM 31100 - Copy Editing ♦
- ASEC 48000 - Agricultural Communication Capstone Seminar
- Agricultural Selective - Credit Hours: 3.00
- Communication or Agriculture Communication Selective (30000+ level) - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## 15 Credits

### Spring 4th Year

- Communication or Agricultural Communication Selective - Credit Hours: 3.00
- Agricultural Selective (30000+ level) - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 5.00-7.00

## 14-16 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Agricultural Education, BS

### About the Program

Agricultural education students combine their interest in agriculture with their desire to make a difference in the lives of young people. Students are prepared to teach agricultural science, business, and related subjects in middle school, high school, or college settings. They also can pursue careers in agricultural businesses and organizations. There is a high demand for agricultural education teachers in Indiana and across the United States.

This program meets state and national licensure standards and is accredited by the Council for the Accreditation of Educator Preparation (CAEP) and the State of Indiana, State Board of Education. Admission to and successful completion of the Teacher Education Program (TEP) are required.

Agricultural Education Website

Agricultural Education Major Change (CODO) Requirements

## Degree Requirements

# 128 Credits Required

## Departmental/Program Major Courses (49 credits)

*All Required Major courses, and Professional Education courses, including Learner Pathway (Selective) Concentration courses, are all calculated into the Professional Education GPA ("B" average with no grade lower than a "C").*

## Required Major Courses (12 credits)

- ASEC 24000 - Seminar In Agricultural Education
- ASEC 31800 - Coordination Of Supervised Agricultural Experience Programs
- ASEC 31900 - Planning Agricultural Science And Business Programs
- ASEC 34000 - Laboratory Practices In Agricultural Education
- ASEC 34100 - Curriculum Development In Agricultural Education
- ASEC 44000 - Methods Of Teaching Agricultural Education (satisfies COA Written or Oral Communication 20000+)

## Professional Education Requirements (37 credits)

### Professional Education Courses (22 credits)

- EDCI 20002 - Special Populations Seminar: English Language Learners And Students With Gifts And Talents
- EDCI 20500 - Exploring Teaching As A Career ♦ - Credit Hours: 2.00
- EDCI 27000 - Introduction To Educational Technology And Computing - Credit Hours: 1.00 (satisfies Information Literacy for core)
- EDCI 28500 - Multiculturalism And Education ♦ - Credit Hours: 2.00 (satisfies COA Multicultural Awareness)
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems - Credit Hours: 1.00
- EDCI 35000 - Community Issues & Applications For Educators - Credit Hours: 1.00
- EDCI 37001 - Teaching And Learning English As A New Language - Credit Hours: 2.00
- EDPS 20001 - Special Populations Seminar: Focus On Students With Disabilities And Differentiation Approaches
- EDPS 23500 - Learning And Motivation ♦ - Credit Hours: 2.00
- EDPS 24000 - Children With Gifts, Creativity, And Talents

- EDPS 24800 - Differentiating Curriculum And Instruction
- EDPS 26501 - The Inclusive Classroom ♦
- EDPS 32700 - Classroom Assessment - Credit Hours: 1.00
- EDPS 36201 - Positive Behavioral Supports - Credit Hours: 2.00
- EDPS 43010 - Secondary Creating And Managing Learning Environments - Credit Hours: 1.00
- EDST 20010 - Educational Policies And Laws - Credit Hours: 1.00

## Professional Education Capstone Course (12 credits)

- EDCI 49800 - Supervised Teaching (Capstone) - Credit Hours: 12.00 (satisfies Oral Communication for core)

## Learner Pathway Selective (3 credits)

*Choose one course from one of the learner pathway areas below. Students can elect to take additional coursework to complete a full concentration if they choose, but is not required. See the links for concentration requirements.*

*If you desire additional information regarding the Learner Pathway Concentrations, please reach out to your academic advisor or visit the Learner Specialty Concentrations tab found here.*

### **English Language Learners**

- EDCI 51900 - Teaching English Language Learners
- EDCI 52600 - Language Study For Educators
- **High Ability** - All courses must be completed with a B- or better average.
- EDPS 54200 - Curriculum And Program Development In Gifted Education
- EDPS 54500 - Social And Affective Development Of Gifted Students

### **Special Education**

- EDPS 21100 - Special Education Law, Policy, And Ethical Guidelines
- **Applied Behavior Analysis**
- EDPS 34100 - Introduction To Philosophical Underpinnings And Concepts Of Applied Behavior Analysis
- EDPS 34200 - Applied Behavior Analysis - Assessment And Intervention

## Other Departmental /Program Course Requirements (78-79 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12100 - Introduction To Agricultural Sciences Education And Communication Academic Programs
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics (satisfies Human Culture Behavioral/Social Science for core) or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- AGECE 31000 - Farm Organization ♦ or
- AGECE 33000 - Management Methods For Agricultural Business ♦
- AGRY 25500 - Soil Science
- AGRY 32000 - Genetics

- AGRY 37500 - Crop Production Systems
- ANSC 10200 - Introduction To Animal Agriculture ♦ or
- ANSC 10600 - Biology Companion Animal ♦
- ANSC 22100 - Principles Of Animal Nutrition
- ASM 20100 - Construction And Maintenance
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry (satisfies Science #2 for core)
- FNR 12500 - Environmental Science And Conservation (satisfies Science, Technology, & Society for core)
- FS 16100 - Science Of Food ♦ or
- NUTR 20500 - Food Science I ♦
- HORT 10100 - Fundamentals Of Horticulture
- HORT 21200 - Greenhouse And Landscape Fundamentals For Educators or
- ASEC 21200 - Greenhouse And Landscape Fundamentals For Educators
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core) or
- MA 16010 - Applied Calculus I
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- **Written Communication Selective** - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- ASM 1XXXX Welding Transfer Credits - Credit Hours: 3.00
- Biological Sciences Selectives - Credit Hours: 8.00 (see Agricultural Education Supplemental Information )
- Technical Agriculture Selective - Credit Hours: 9.00 (see Agricultural Education Supplemental Information )
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- COA Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## Elective (0-1 credits)

## Grade Requirements

- All Education and Agricultural Sciences Education Communication courses (ASEC, EDCI, EDPS, and EDST prefix) must earn a minimum grade of "C for milestones and licensure.

## GPA Requirements

- 2.0 Graduation GPA is required for Bachelor of Science degree.
- 2.5 Overall GPA is required for the Teacher Education Program and Indiana Licensure.
- 3.0 Professional Education GPA is required for the Teacher Education Program and Indiana Licensure.
- 2.5 Content GPA, as calculated by the Office of Teacher Education and Licensure, is required for the Teacher Education Program and Indiana Licensure.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)

- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency [website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Additional Information

- Indiana Licensure information - *Each student must meet all degree, program, and licensure requirements prior to being recommended for licensure.*

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12100 - Introduction To Agricultural Sciences Education And Communication Academic Programs
- ASEC 24000 - Seminar In Agricultural Education
- EDCI 20500 - Exploring Teaching As A Career ♦ - Credit Hours: 2.00
- EDST 20010 - Educational Policies And Laws - Credit Hours: 1.00
- HORT 10100 - Fundamentals Of Horticulture
- Biological Science Selective - Credit Hours: 4.00
- First-Year Composition Selective - Credit Hours: 3.00 - 4.00

15 Credits



## Spring 1st Year

- AGECE 21700 - Economics
- ANSC 10200 - Introduction To Animal Agriculture ♦ or
- ANSC 10600 - Biology Companion Animal ♦
- EDCI 28500 - Multiculturalism And Education ♦ - Credit Hours: 2.00
- EDCI 35000 - Community Issues & Applications For Educators - Credit Hours: 1.00
- MA 15800 - Precalculus - Functions And Trigonometry or
- MA 16010 - Applied Calculus I
- Biological Sciences Selective - Credit Hours: 4.00

## 16 Credits

## Fall 2nd Year

- CHM 11100 - General Chemistry ♦
- ASM 1XXXXX Welding (transfer credits) - Credit Hours: 3.00
- EDCI 20002 - Special Populations Seminar: English Language Learners And Students With Gifts And Talents
- EDPS 24000 - Children With Gifts, Creativity, And Talents
- EDPS 36201 - Positive Behavioral Supports - Credit Hours: 2.00
- EDCI 37001 - Teaching And Learning English As A New Language - Credit Hours: 2.00
- FNR 12500 - Environmental Science And Conservation

## 15 Credits

## Spring 2nd Year

- ASEC 21200 - Greenhouse And Landscape Fundamentals For Educators or
- HORT 21200 - Greenhouse And Landscape Fundamentals For Educators
- ASEC 31800 - Coordination Of Supervised Agricultural Experience Programs
- ASEC 31900 - Planning Agricultural Science And Business Programs
- CHM 11200 - General Chemistry
- EDPS 20001 - Special Populations Seminar: Focus On Students With Disabilities And Differentiation Approaches
- EDPS 23500 - Learning And Motivation ♦ - Credit Hours: 2.00
- EDPS 24800 - Differentiating Curriculum And Instruction
- EDPS 26501 - The Inclusive Classroom ♦

## 16 Credits

## Fall 3rd Year

- AGRY 25500 - Soil Science
- ANSC 22100 - Principles Of Animal Nutrition
- ASEC 34000 - Laboratory Practices In Agricultural Education

- ASM 20100 - Construction And Maintenance
- EDCI 30900 - Reading In Middle And Secondary Schools: Methods And Problems - Credit Hours: 1.00
- EDPS 32700 - Classroom Assessment - Credit Hours: 1.00
- EDPS 43010 - Secondary Creating And Managing Learning Environments - Credit Hours: 2.00
- Technical Agriculture Selective - Credit Hours: 3.00

## 18 Credits

### Spring 3rd Year

- AGRY 32000 - Genetics
- AGRY 37500 - Crop Production Systems
- ASEC 34100 - Curriculum Development In Agricultural Education
- EDCI 27000 - Introduction To Educational Technology And Computing - Credit Hours: 1.00
- AGECE 31000 - Farm Organization ♦ or
- AGECE 33000 - Management Methods For Agricultural Business ♦
- Technical Agriculture Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## 18 Credits

### Fall 4th Year

- ASEC 44000 - Methods Of Teaching Agricultural Education - Credit Hours: 1.00
- STAT 30100 - Elementary Statistical Methods
- FS 16100 - Science Of Food ♦ or
- NUTR 20500 - Food Science I ♦
- Learner Pathway Selective - Credit Hours: 3.00
- Technical Agriculture Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours 3.00

## 18 Credits

### Spring 4th Year

- EDCI 49800 - Supervised Teaching (Capstone) - Credit Hours: 12.00

## 12 Credits

### Pre-Requisite Information

For pre-requisite information, [click here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

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The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Program Information

### **Agricultural Communication Supplemental Information**

#### Agricultural Selective (15 Credits)

- ABE 10000:59999
- AGEC 10000:59999
- AGR 10000:59999
- AGRY 10000:59999
- ANSC 10000:59999
- ASEC 10000:59999
- ASM 10000:59999
- BCHM 10000:59999
- BTNY 10000:59999
- ENTM 10000:59999
- FNR 10000:59999
- FS 10000:59999
- HORT 10000:59999
- LA 10000:59999
- NRES 10000:59999
- SFS 10000:59999

## Agricultural Selective 30000+ Level (6 Credits)

- ABE 30000:59999
- AGECE 30000:59999
- AGR 30000:59999
- AGRY 30000:59999
- ANSC 30000:59999
- ASEC 30000:59999
- ASM 30000:59999
- BCHM 30000:59999
- BTNY 30000:59999
- ENTM 30000:59999
- FNR 30000:59999
- FS 30000:59999
- HORT 30000:59999
- LA 30000:59999
- NRES 30000:59999
- SFS 30000:59999

## College of Agriculture: Biological Science Selective (8 credits)

*To fulfill the biological sciences core requirement, all students must complete at least two hours of laboratory credit in biological sciences each week for 32 weeks, or equivalent. Completion of course sequences is recommended. Courses with an (\*) have a laboratory component.*

- BIOL 11000 - Fundamentals Of Biology I \*
- BIOL 11100 - Fundamentals Of Biology II \*
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First Year Biology Laboratory \*
- BIOL 20300 - Human Anatomy And Physiology \*
- BIOL 20400 - Human Anatomy And Physiology \*
- BIOL 22100 - Introduction To Microbiology \*
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function \*
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology \*
- BIOL 29500 - Special Assignments (Title: Quantitative Biology of the Living Cell)
- BTNY 11000 - Introduction To Plant Science \*
- BTNY 12000 - Principles Of Plant Biology I
- BTNY 12100 - Principles Of Plant Biology II
- HORT 30100 - Plant Physiology \*

## College of Agriculture: Additional Mathematics or Science Selectives

- AGR 33300 - Data Science For Agriculture

- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- AGEC 45100 - Applied Econometrics
- AGRY 12500 - Environmental Science And Conservation
- AGRY 25500 - Soil Science
- AGRY 27000 - Forest Soils
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 46500 - Soil Physical Properties
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- BCHM 10000 - Introduction To Biochemistry
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- BTNY 11000 - Introduction To Plant Science
- BTNY 26200 - Plant Structure And Tissue Biology
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 53500 - Plant Disease Epidemiology
- CHM 22400 - Introductory Quantitative Analysis
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- CHM 26100 - Organic Chemistry I
- CHM 26200 - Organic Chemistry II
- CHM 26300 - Organic Chemistry Laboratory I
- CHM 26400 - Organic Chemistry Laboratory II
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- CS 18000 - Problem Solving And Object-Oriented Programming
- EAPS 11100 - Physical Geology
- EAPS 11200 - Earth Through Time
- EAPS 12500 - Environmental Science And Conservation
- EAPS 22100 - Survey Of Atmospheric Science
- ENTM 10200 - The Practice Of Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior

- ENTM 24200 - Data Science
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 30100 - Experimentation And Analysis
- ENTM 31200 - Plant-Insect Chemical Ecology
- ENTM 32810 - Practical Molecular Biology
- ENTM 35300 - Insecticides And Environment
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 12500 - Environmental Science And Conservation
- FNR 20100 - Marine Biology
- FNR 23000 - The World's Forests And Society
- FNR 24000 - Wildlife In America
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 30500 - Conservation Genetics
- FNR 35700 - Fundamental Remote Sensing
- HONR 49900 - Honors Research Project (Title: Human Diseases and Disorders)
- HORT 10100 - Fundamentals Of Horticulture
- HORT 30100 - Plant Physiology
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- NRES 12500 - Environmental Science And Conservation
- NRES 23000 - Survey Of Meteorology
- NRES 25500 - Soil Science
- PHYS 17200 - Modern Mechanics
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- PHYS 23300 - Physics For Life Sciences I
- PHYS 23400 - Physics For Life Sciences II
- PHYS 24100 - Electricity And Optics
- STAT 22500 - Introduction To Probability Models
- STAT 50200 - Experimental Statistics II
- STAT 51100 - Statistical Methods
- STAT 51200 - Applied Regression Analysis

## **Agricultural Education Supplemental Information**

### **College of Agriculture: Biological Science Selective (8 credits)**

*To fulfill the biological sciences core requirement, all students must complete at least two hours of laboratory credit in biological sciences each week for 32 weeks, or equivalent. Completion of course sequences is recommended. Courses with an (\*) have a laboratory component.*

- BIOL 11000 - Fundamentals Of Biology I \*

- BIOL 11100 - Fundamentals Of Biology II \*
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 13500 - First Year Biology Laboratory \*
- BIOL 20300 - Human Anatomy And Physiology \*
- BIOL 20400 - Human Anatomy And Physiology \*
- BIOL 22100 - Introduction To Microbiology \*
- BIOL 23000 - Biology Of The Living Cell
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function \*
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology \*
- BIOL 29500 - Special Assignments (Title: Quantitative Biology of the Living Cell)
- BTNY 11000 - Introduction To Plant Science \*
- BTNY 12000 - Principles Of Plant Biology I
- BTNY 12100 - Principles Of Plant Biology II
- HORT 30100 - Plant Physiology \*

## Technical Agriculture Selective (15 Credits)

- AGEC 10000:59999
- AGRY 10000:59999
- ANSC 10000:59999
- ASM 10000:59999
- BTNY 10000:59999
- ENTM 10000:59999
- FNR 10000:59999
- FS 10000:59999
- HORT 10000:59999
- LA 10000:59999
- NRES 10000:59999
- SFS 10000:59999

## Department of Agronomy

### Overview

The Department of Agronomy provides progressive and relevant undergraduate, graduate and extension education programs; conducts high impact fundamental and applied research at multiple scales to ensure that our science addresses immediate problems and anticipates future challenges; actively engages partners in the public and private sectors; and contributes to the development of the national and international agenda for research and education.

### Faculty (website)

### Department of Agronomy (website)

# Contact Information

Department of Agronomy

Purdue University

Lilly Hall of Life Sciences  
915 W. State Street  
West Lafayette, IN 47907-2054  
Phone: 765-494-4773

Email: [agronomy@purdue.edu](mailto:agronomy@purdue.edu)

The Undergraduate Academic Services office is located in LILY 2-414.

# Graduate Information

For Graduate Information please see [Agronomy Graduate Program Information](#)

## Baccalaureate

### **Agronomy: Agronomic Business and Marketing Concentration, BS**

#### About the Program

**Agronomic Business and Marketing** prepares students to meet the high demand for professionals in technical sales and marketing or professional field agronomy with strength in business. Students have the flexibility to tailor plans of study to meet their individualized interests and needs by combining strengths in business, marketing, and agronomy. The unique advantage of this option is the primary strength generated in cropping system management amplified by strength in agri-business management.

[Agronomy Website](#)

[Agronomy Major Change \(CODO\) Requirements](#)

#### Degree Requirements

## **120 Credits Required**



## Departmental/Program Major Courses (62-63 credits)

### Required Major Courses (11 credits)

- AGRY 25500 - Soil Science
- AGRY 32000 - Genetics
- AGRY 36500 - Soil Fertility
- AGRY 39800 - Agronomy Seminar
- AGRY 49800 - Agronomy Senior Seminar (Capstone)

## Agronomic Business and Marketing Concentration (51-52 credits)

### Required Concentration Courses (30-31 credits)

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- ENGL 42000 - Business Writing
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- MGMT 21200 - Business Accounting
- AGRY 12500 - Environmental Science And Conservation (satisfies Science, Technology, & Society for core) or
- AGRY 28500 - World Crop Adaptation And Distribution (satisfies Science, Technology, & Society for core)
- AGECE 32700 - Principles Of Food And Agribusiness Marketing or
- MGMT 32300 - Principles Of Marketing
- **Agricultural Economics Selective** - Credit Hours: 6.00-7.00
- AGECE 31000 - Farm Organization
- AGECE 33000 - Management Methods For Agricultural Business
- AGECE 33100 - Principles Of Industrial Selling
- AGECE 41100 - Farm Management

### Concentration Selective Courses (21 credits)

- AGECE/CSR/HORT/OLS Selective - Credit Hours: 6.00
  - Agricultural Economics (*AGECE 21800:59999*)
  - Consumer Science and Retailing (*CSR 20000:59999*)
  - Horticulture (*HORT 10100:59999*)
  - OLS (*OLS 20000:49999*)
- Agronomy Selective (*AGRY 10500:59999*) - Credit Hours: 3.00
- Agronomy Crops Selective - Credit Hours: 3.00
- Ecology or Plant Ecology Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## Supplemental Information

[Click here for Agronomy Supplemental Information](#)

## Other Departmental/Program Course Requirements (48-52 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II  
OR  
BIOL 11000 - Fundamentals Of Biology I and
- BTNY 11000 - Introduction To Plant Science  
OR
- BTNY 12000 - Principles Of Plant Biology I and
- BTNY 12100 - Principles Of Plant Biology II
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core) or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 11600 - General Chemistry
- CHM 25700 - Organic Chemistry
- STAT 30100 - Elementary Statistical Methods (satisfies Quantitative Reasoning for core)
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core) or
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Additional Mathematics or Science Selective - Credit Hours: 8.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (5-10 credits)

- Electives - Credit Hours: 5.00-10.00

## Supplemental Information

[Click here for Agronomy Supplemental Information](#)

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)

- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- CHM 11100 - General Chemistry or
- CHM 11500 - General Chemistry
- Agronomy Crops Selective - Credit Hours: 3.00
- BIOL 11000 - Fundamentals Of Biology I or
- BTNY 12000 - Principles Of Plant Biology I
- MA 15800 - Precalculus - Functions And Trigonometry or
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I

14-16 Credits

### Spring 1st Year

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry
  
- Agronomy Selective (*AGRY 10500:59999*) - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00
- BIOL 11100 - Fundamentals Of Biology II or
- BTNY 11000 - Introduction To Plant Science or
- BTNY 12100 - Principles Of Plant Biology II

## 16-18 Credits

### Fall 2nd Year

- AGRY 25500 - Soil Science
- AGRY 39800 - Agronomy Seminar
- BTNY 30100 - Introductory Plant Pathology
- CHM 25700 - Organic Chemistry
- Oral Communication Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 16-17 Credits

### Spring 2nd Year

- AGRY 36500 - Soil Fertility
- STAT 30100 - Elementary Statistical Methods
- AGRY 12500 - Environmental Science And Conservation or
- AGRY 28500 - World Crop Adaptation And Distribution
- Agricultural Economics Selective - Credit Hours: 3.00-4.00
- Ecology Selective - Credit Hours: 3.00

## 15-16 Credits

### Fall 3rd Year

- BTNY 30400 - Introductory Weed Science
- MGMT 21200 - Business Accounting
- Additional Math or Science Selectives - Credit Hours: 4.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 14-15 Credits

### Spring 3rd Year

- AGECE 33100 - Principles Of Industrial Selling
- AGRY 32000 - Genetics
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- Additional Math or Science Selectives - Credit Hours: 4.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Fall 4th Year

- AGRY 49800 - Agronomy Senior Seminar
- Agricultural Economics Selective - Credit Hours: 3.00
- Human Cultures Humanities Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## 13 Credits

### Spring 4th Year

- ENGL 42000 - Business Writing
- AGECE 32700 - Principles Of Food And Agribusiness Marketing or
- MGMT 32300 - Principles Of Marketing
- Agricultural Economics, Consumer Science and Retailing, Horticulture, or OLS Selective - Credit Hours: 6.00
- Electives - Credit Hours: 1.00-4.00

## 13-16 Credits

### Pre-Requisite Information

For pre-requisite information, click [here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# Agronomy: Crop and Soil Management Concentration, BS

## About the Program

**Crop and Soil Management** is for students interested in applying basic agronomic information to practical situations or problems. This is an ideal option for students who plan to become a professional crops/soils manager as an agronomist, farm manager, soil conservationist, or a related profession. Those interested in crop management frequently select cropping systems, crop physiology, plant breeding, and forage management courses.

[Agronomy Website](#)

[Agronomy Major Change \(CODO\) Requirements](#)

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (59 credits)

### Required Major Courses (11 credits)

- AGRY 25500 - Soil Science
- AGRY 32000 - Genetics
- AGRY 36500 - Soil Fertility
- AGRY 39800 - Agronomy Seminar
- AGRY 49800 - Agronomy Senior Seminar (Capstone)

## Crop and Soil Management Concentration (48 credits)

### Required Concentration Courses (6 credits)

- AGRY 10500 - Crop Production

- AGRY 12500 - Environmental Science And Conservation or
- AGRY 28500 - World Crop Adaptation And Distribution

### Concentration Selective Courses (15 credits)

- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy
- AGEC 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Agronomy Selective (*AGRY 10500:59999*) - Credit Hours: 3.00
- Ecology or Plant Ecology Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

### Directed Selective (27 credits)

- AGEC 10500:59999 and/or ECON 20000:59999 (Only 6 credits can be used to Directed Selectives)
- AGRY 10500:59999
- MGMT 20000:59999
- ASM 54000 - Geographic Information System Application
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- COM 20400 - Critical Perspectives On Communication
- COM 25200 - Writing For Mass Media
- COM 25600 - Introduction To Advertising
- COM 45600 - Advertising Writing
- COM 49500 - Special Topics In Public Relations And Rhetorical Advocacy
- EAPS 11100 - Physical Geology
- ENGL 30400 - Advanced Composition
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- FNR 35700 - Fundamental Remote Sensing
- FNR 35900 - Spatial Ecology And GIS

### Other Departmental/Program Course Requirements (48-52 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
  - AGR 11300 - Introduction To Agronomy Academic Programs
  - Biology Requirement - Credit Hours: 8.00
  - BIOL 11000 - Fundamentals Of Biology I and
  - BIOL 11100 - Fundamentals Of Biology II
- OR



- BIOL 11000 - Fundamentals Of Biology I and
- BTNY 11000 - Introduction To Plant Science  
OR
- BTNY 12000 - Principles Of Plant Biology I and
- BTNY 12100 - Principles Of Plant Biology II
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core) or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 11600 - General Chemistry
- CHM 25700 - Organic Chemistry
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core) or
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Additional Mathematics or Science Selectives - Credit Hours: 8.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (6-10 credits)

- Electives - Credit Hours: 6.00-10.00

## Supplemental Information

[Click here for Agronomy Supplemental Information](#)

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

[College of Agriculture Undergraduate Pass/No Pass Policy](#)

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00

- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or

- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- AGRY 10500 - Crop Production
- CHM 11100 - General Chemistry or
- CHM 11500 - General Chemistry
- BIOL 11000 - Fundamentals Of Biology I or
- BTNY 12000 - Principles Of Plant Biology I
- MA 15800 - Precalculus - Functions And Trigonometry or
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I

### 14-16 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry
- BIOL 11100 - Fundamentals Of Biology II or
- BTNY 11000 - Introduction To Plant Science or
- BTNY 12100 - Principles Of Plant Biology II  
Economics Selective - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Written Communication Selective - Credit Hours: 3.00-4.00
- Electives - Credit Hours: 2.00-3.00

### 15-18 Credits

## Fall 2nd Year

- AGRY 25500 - Soil Science
- AGRY 39800 - Agronomy Seminar
- CHM 25700 - Organic Chemistry
- Directed Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00

14 Credits

## Spring 2nd Year

- AGRY 36500 - Soil Fertility
- STAT 30100 - Elementary Statistical Methods
- AGRY 12500 - Environmental Science And Conservation or
- AGRY 28500 - World Crop Adaptation And Distribution
- Ecology or Plant Ecology Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

15 Credits

## Fall 3rd Year

- Directed Selectives - Credit Hours: 6.00
- Math or Science Selectives - Credit Hours: 4.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

16 Credits

## Spring 3rd Year

- AGRY 32000 - Genetics
- Agronomy Selective - Credit Hours: 3.00
- Directed Selective - Credit Hours: 3.00
- Math or Science Selectives - Credit Hours: 4.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

16 Credits

## Fall 4th Year

- AGRY 49800 - Agronomy Senior Seminar
- Directed Selectives - Credit Hours: 6.00
- Humanities Selective - Credit Hours: 3.00

- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 15-16 Credits

## Spring 4th Year

- Directed Selectives - Credit Hours: 9.00
- Electives - Credit Hours: 2.00-4.00

## 11-13 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Agronomy: International Agronomy Concentration, BS**

### About the Program

**International Agronomy** is designed for students interested in the agronomic aspects of international agricultural development. The program prepares students for opportunities in world agriculture through careers with social action agencies, government and/or private industry. Students in this major build a strong foundation in science to go along with their study of international trade, culture, religion, language, food security, and agricultural development.

Agronomy Website

Agronomy Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (62 credits)

### Required Major Courses (11 credits)

- AGRY 25500 - Soil Science
- AGRY 32000 - Genetics
- AGRY 36500 - Soil Fertility
- AGRY 39800 - Agronomy Seminar
- AGRY 49800 - Agronomy Senior Seminar (Capstone)

## International Agronomy Concentration (51 credits)

### Required Concentration Courses (19 credits)

- AGECE 34000 - International Economic Development
- AGECE 45000 - International Agricultural Trade
- AGRY 28500 - World Crop Adaptation And Distribution (satisfies Science, Technology, & Society for core)
- AGRY 33500 - Weather And Climate
- AGRY 35000 - Global Awareness - Credit Hours: 1.00
- AGRY 56500 - Soils And Landscapes
- AGRY 59800 - Special Problems - Credit Hours: 3.00

### Concentration Selective Courses (32 credits)

- **International Agronomy Concentration Directed Selective** - Credit Hours: 6.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory  
OR
- BTNY 30100 - Introductory Plant Pathology  
OR
- BTNY 30400 - Introductory Weed Science
- **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Macroeconomics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGEC 21700 - Economics
- ECON 25200 - Macroeconomics
- Agriculture or Science Selectives - Credit Hours: 6.00
- Conversation Language Selective - Credit Hours: 2.00
- Ecology or Plant Ecology Selective - Credit Hours: 3.00
- Foreign Language Selective - Credit Hours: 9.00

## Other Departmental/Program Course Requirements (48-52 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- Biology Requirement - Credit Hours: 8.00
- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II
- OR
- BIOL 11000 - Fundamentals Of Biology I and
- BTNY 11000 - Introduction To Plant Science
- OR
- BTNY 12000 - Principles Of Plant Biology I and
- BTNY 12100 - Principles Of Plant Biology II
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core) or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 11600 - General Chemistry
- CHM 25700 - Organic Chemistry
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core) or
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- Additional Mathematics or Science Selectives - Credit Hours: 8.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (6-10 credits)

- Electives - Credit Hours: 6.00-10.00

## Supplemental Information

Supplemental List for Agronomy Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.



# University Requirements

## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- CHM 11100 - General Chemistry *or*
- CHM 11500 - General Chemistry
- BIOL 11000 - Fundamentals Of Biology I *or*
- BTNY 12000 - Principles Of Plant Biology I

- MA 15800 - Precalculus - Functions And Trigonometry or
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Oral Communication Selective - Credit Hours: 3.00

## 14-16 Credits

### Spring 1st Year

- AGRY 28500 - World Crop Adaptation And Distribution
- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry
- BIOL 11100 - Fundamentals Of Biology II or
- BTNY 11000 - Introduction To Plant Science or
- BTNY 12100 - Principles Of Plant Biology II  
Microeconomics Selective - **Credit Hours: 3.00**
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- Written Communication Selective - Credit Hours: 3.00-4.00

## 16-18 Credits

### Fall 2nd Year

- AGRY 25500 - Soil Science
- AGRY 39800 - Agronomy Seminar
- CHM 25700 - Organic Chemistry  
Macroeconomics Selective - **Credit Hours: 3.00**
- AGECE 21700 - Economics or
- ECON 25200 - Macroeconomics
- Foreign Language Selective - Credit Hours: 3.00

## 14 Credits

### Spring 2nd Year

- AGRY 36500 - Soil Fertility
- STAT 30100 - Elementary Statistical Methods
- Ecology or Plant Ecology Selective - Credit Hours: 3.00
- Additional Mathematics or Science Selective - Credit Hours: 4.00
- Written or Oral Communication Selective (2000+ level) - Credit Hours: 3.00

## 16 Credits

### Fall 3rd Year

- AGEC 45000 - International Agricultural Trade
- International Agronomy Concentration Directed Selective - Credit Hours: 3.00
- Foreign Language Selective - Credit Hours: 3.00
- Additional Mathematics or Science Selectives - Credit Hours: 4.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16 Credits

### Spring 3rd Year

- AGEC 34000 - International Economic Development
- AGRY 32000 - Genetics
- AGRY 33500 - Weather And Climate
- AGRY 35000 - Global Awareness
- Conversation Language Selective - Credit Hours: 2.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- AGRY 49800 - Agronomy Senior Seminar
- AGRY 56500 - Soils And Landscapes
- AGRY 59800 - Special Problems - Credit Hours: 3.00
- Foreign Language Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 12-13 Credits

### Spring 4th Year

- International Agronomy Concentration Directed Selective - Credit Hours: 3.00
- Agriculture or Science Selective - Credit Hours: 6.00
- Electives - Credit Hours: 4.00-7.00

## 13-16 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL - American Sign Language;

ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Applied Meteorology and Climatology, BS

### About the Program

Many graduates pursue careers with the National Weather Service, the National Environmental Satellite Data and Information Service, the Environmental Research Laboratories, and the Department of Defense. Graduates also pursue careers with private meteorological or environmental consulting firms that provide weather information and apply atmospheric sciences to air pollution control, energy distribution, marketing, transportation, weather modification, and agriculture. Graduates also work for insurance and commodities industries that employ meteorologists who are educated in statistics, agriculture, and world climates.

Applied meteorologists apply weather and climate information to problems facing agriculture and commerce. Students acquire the skills and tools necessary to improve the health, safety, and productivity of today's world. Graduates work on many environmental problems such as air quality, renewable energy sources, climate change and the impacts of climate change.

The option involves extensive coursework in meteorology, physics, and mathematics, as well as first-hand experience in applying basic concepts to real world situations. Internship programs are available with private industry, the National Weather Service, or the National Oceanic and Atmospheric Administration. In addition there are regular opportunities to work in University laboratories and the State Climate Office.

[Agronomy Website](#)

[Applied Meteorology and Climatology Major Change \(CODO\) Requirements](#)

### Degree Requirements

## 120 Credits Required

## Departmental/Program Major Courses (32 credits)

### Required Major Courses (32 credits)

- AGRY 28500 - World Crop Adaptation And Distribution (satisfies Science, Technology, & Society for core)
- AGRY 33500 - Weather And Climate
- AGRY 33700 - Environmental Hydrology
- AGRY 39800 - Agronomy Seminar
- AGRY 43100 - Atmospheric Thermodynamics
- AGRY 43200 - Atmospheric Dynamics I
- AGRY 43300 - Atmospheric Dynamics II
- AGRY 44100 - Synoptic Laboratory I
- AGRY 44200 - Synoptic Laboratory II
- AGRY 44300 - Synoptic Laboratory III
- AGRY 49800 - Agronomy Senior Seminar (Capstone)
- AGRY 53500 - Boundary Layer Meteorology
- AGRY 53600 - Environmental Biophysics
- AGRY 54500 - Remote Sensing Of Land Resources

### Other Departmental /Program Course Requirements (77-80 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CS 17700 - Programming With Multimedia Objects
- EAPS 22700 - Introduction To Atmospheric Observation And Measurements
- EAPS 43400 - Weather Analysis And Forecasting
- EAPS 53200 - Atmospheric Physics I
- MA 16100 - Plane Analytic Geometry And Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26200 - Linear Algebra And Differential Equations
- PHYS 17200 - Modern Mechanics
- PHYS 24100 - Electricity And Optics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II  
OR
- BIOL 11000 - Fundamentals Of Biology I and
- BTNY 11000 - Introduction To Plant Science  
OR
- BTNY 12000 - Principles Of Plant Biology I and
- BTNY 12100 - Principles Of Plant Biology II

- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (8-11 credits)

- Electives - Credit Hours: 8.00-11.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

# College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- CHM 11100 - General Chemistry ♦
- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Oral Communication Selective - Credit Hours: 3.00
- BIOL 11000 - Fundamentals Of Biology I or
- BTNY 12000 - Principles Of Plant Biology I

### 15-16 Credits

### Spring 1st Year

- MA 16200 - Plane Analytic Geometry And Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- CHM 11200 - General Chemistry ♦
- BIOL 11100 - Fundamentals Of Biology II or
- BTNY 11000 - Introduction To Plant Science or
- BTNY 12100 - Principles Of Plant Biology II
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-16 Credits

### Fall 2nd Year

- AGRY 39800 - Agronomy Seminar
- CS 17700 - Programming With Multimedia Objects
- EAPS 22700 - Introduction To Atmospheric Observation And Measurements
- MA 26100 - Multivariate Calculus
- PHYS 17200 - Modern Mechanics

### 15 Credits

### Spring 2nd Year



- AGRY 33500 - Weather And Climate
- AGRY 44100 - Synoptic Laboratory I
- MA 26200 - Linear Algebra And Differential Equations
- AGECEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- PHYS 24100 - Electricity And Optics
- Humanities or Social Science Selective - Credit Hours: 3.00
- **Economics Selective** - Credit Hours: 3.00
- AGECEC 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics

17 Credits

### Fall 3rd Year

- AGRY 43100 - Atmospheric Thermodynamics
- STAT 30100 - Elementary Statistical Methods
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

15 Credits

### Spring 3rd Year

- AGRY 28500 - World Crop Adaptation And Distribution
- AGRY 43200 - Atmospheric Dynamics I
- AGRY 44200 - Synoptic Laboratory II
- Humanities or Social Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 3.00-4.00

13-14 Credits

### Fall 4th Year

- AGRY 43300 - Atmospheric Dynamics II
- AGRY 44300 - Synoptic Laboratory III
- AGRY 49800 - Agronomy Senior Seminar
- AGRY 53500 - Boundary Layer Meteorology
- AGRY 54500 - Remote Sensing Of Land Resources
- Elective - Credit Hours: 2.00-3.00

13-14 Credits

## Spring 4th Year

- AGRY 33700 - Environmental Hydrology
- AGRY 53600 - Environmental Biophysics
- EAPS 43400 - Weather Analysis And Forecasting
- EAPS 53200 - Atmospheric Physics I
- Elective - Credit Hours: 3.00-4.00

## 15-16 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Crop Science, BS

### About the Program

Crop science provides an education in the basic sciences, with applications in crop plant management and crop improvement. Opportunities are numerous and encompass a broad range in science, business, and education. Students

are especially qualified for graduate study in plant nutrition, environmental science, crop physiology and ecology, biotechnology and plant genetics, and plant breeding.

Agronomy Website

Crop Science Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (33-34 credits)

### Required Major Courses (27-28 credits)

- AGRY 10500 - Crop Production
- AGRY 25500 - Soil Science
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 39800 - Agronomy Seminar
- AGRY 49800 - Agronomy Senior Seminar (Capstone)
- AGRY 51500 - Plant Mineral Nutrition
- AGRY 12500 - Environmental Science And Conservation (satisfies Science, Technology, & Society for core) or
- AGRY 28500 - World Crop Adaptation And Distribution (satisfies Science, Technology, & Society for core)
- AGRY 52500 - Crop Physiology And Ecology or
- HORT 30100 - Plant Physiology

### Agronomy Selectives (6 credits)

- AGRY 10000:59999 - Credit Hours: 6.00

## Other Departmental/Program Course Requirements (77-81 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core) or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core) or

- CHM 11600 - General Chemistry
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16020 - Applied Calculus II
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II  
OR
- BIOL 11000 - Fundamentals Of Biology I and
- BTNY 11000 - Introduction To Plant Science  
OR
- BTNY 12000 - Principles Of Plant Biology I and
- BTNY 12100 - Principles Of Plant Biology II
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Business Selective - Credit Hours: 3.00 (*AGECE 10000:59999; ECON 10000:59999; MGMT 10000:59999; OLS 10000:59999*)
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (5-10 credits)

- Elective - Credit Hours: 5.00-10.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)

- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- AGRY 10500 - Crop Production
- BIOL 11000 - Fundamentals Of Biology I or
- BTNY 12000 - Principles Of Plant Biology I
- CHM 11100 - General Chemistry ♦ or
- CHM 11500 - General Chemistry
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

### 17-20 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦ or
- CHM 11600 - General Chemistry

- MA 16020 - Applied Calculus II
- BIOL 11100 - Fundamentals Of Biology II or
- BTNY 11000 - Introduction To Plant Science or
- BTNY 12100 - Principles Of Plant Biology II
- **Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Agronomy Selective (AGRY 10000:59999) - Credit Hours: 3.00

## 16-17 Credits

### Fall 2nd Year

- AGRY 25500 - Soil Science
- AGRY 39800 - Agronomy Seminar
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- Oral Communication Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-3.00

## 13-15 Credits

### Spring 2nd Year

- AGRY 36500 - Soil Fertility
- STAT 30100 - Elementary Statistical Methods
- AGRY 12500 - Environmental Science And Conservation or
- AGRY 28500 - World Crop Adaptation And Distribution
- Agronomy Selective (AGRY 10000:59999) - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-3.00

## 13-15 Credits

### Fall 3rd Year

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- BTNY 30100 - Introductory Plant Pathology
- PHYS 22000 - General Physics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## 17 Credits

## Spring 3rd Year

- AGRY 33500 - Weather And Climate
- PHYS 22100 - General Physics
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 13 Credits

## Fall 4th Year

- AGRY 49800 - Agronomy Senior Seminar
- AGRY 51500 - Plant Mineral Nutrition
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- Elective - Credit Hours: 3.00

## 14 Credits

## Spring 4th Year

- BTNY 30400 - Introductory Weed Science
- AGRY 52500 - Crop Physiology And Ecology or
- HORT 30100 - Plant Physiology
- Business Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-1.00

## 12-14 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course



The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# Plant Genetics, Breeding, and Biotechnology, BS

## About the Program

Plant genetics, breeding, and biotechnology students are interested in agricultural biotechnology, genetic engineering, and research in genetic mechanisms that control crop growth and development. Students prepare for many research opportunities in industry and acquire the necessary background for graduate studies. Students also learn the fundamentals of genetics and practical plant breeding as well as the latest developments in genetic engineering, environmentally sound crop production practices, development of varieties appropriate for the agriculture of developing countries, and strategies for developing plant lines adapted to environmental stresses. Opportunities exist for training both in laboratory and field practices important to modern genetics research. A professional internship involving practical aspects of the option is required.

Plant Genetics, Breeding, and Biotechnology Website

Plant Genetics, Breeding and Biotechnology Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (21-22 credits)

### Required Major Courses (21-22 credits)

- AGRY 25500 - Soil Science
- AGRY 28500 - World Crop Adaptation And Distribution (satisfies Science, Technology, & Society for core)
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 39800 - Agronomy Seminar
- AGRY 48000 - Plant Genetics
- AGRY 49800 - Agronomy Senior Seminar (Capstone)

- AGRY 52000 - Principles And Methods Of Plant Breeding
- AGRY 52500 - Crop Physiology And Ecology or
- HORT 30100 - Plant Physiology

## Other Departmental /Program Course Requirements (89-93 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- AGR 12500 - Introduction To Plant Science
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- CHM 11500 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11600 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16020 - Applied Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core) or
- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II  
OR
- BIOL 11000 - Fundamentals Of Biology I and
- BTNY 11000 - Introduction To Plant Science  
OR
- BTNY 12000 - Principles Of Plant Biology I and
- BTNY 12100 - Principles Of Plant Biology II
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function or
- BTNY 42000 - Plant Cellular And Developmental Biology
- BIOL 41500 - Introduction To Molecular Biology or
- BTNY 35000 - Biotechnology In Agriculture
- PHYS 17200 - Modern Mechanics or
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics or
- PHYS 24100 - Electricity And Optics
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Directed Selective - Credit Hours: 12.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)

- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (6-9 credits)

- Elective - Credit Hours: 6.00-9.00 (*Credits required depend on Math, Physics, & Physiology course choices*)

## Supplemental List

[Click here for Plant Genetics, Plant Breeding & Biotechnology Supplemental Information](#)

## Grade Requirements

- *Clearly list any/all grade requirements within the program.*

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- *Double-counting policy - where is it allowed and not allowed; specific notes or requirements about courses; repeatable limits, study abroad, etc.*

## Non-course / Non-credit Requirements

- *Degree requirements which are not associated to a course. For example: portfolio, work experience, certifications. Should equal 0 credits.*

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00

- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or

- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Additional Information

- *Any additional information that does not fit into any of the categories above.*

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- AGR 12500 - Introduction To Plant Science
- BIOL 11000 - Fundamentals Of Biology I or
- BTNY 12000 - Principles Of Plant Biology I
- CHM 11500 - General Chemistry ♦
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

### 16-18 Credits

### Spring 1st Year

- CHM 11600 - General Chemistry ♦
- MA 16020 - Applied Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- BIOL 11100 - Fundamentals Of Biology II or
- BTNY 11000 - Introduction To Plant Science or
- BTNY 12100 - Principles Of Plant Biology II
- Elective - Credit Hours: 3.00

### 14-15 Credits

### Fall 2nd Year

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory

- AGRY 39800 - Agronomy Seminar
- PHYS 17200 - Modern Mechanics or
- PHYS 22000 - General Physics
- Directed Selective - Credit Hours: 3.00  
     Economics Selective - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics

## 15 Credits

### Spring 2nd Year

- AGRY 28500 - World Crop Adaptation And Distribution
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- PHYS 22100 - General Physics or
- PHYS 24100 - Electricity And Optics
- Oral Communication Selective - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-1.00

## 15-16 Credits

### Fall 3rd Year

- AGRY 25500 - Soil Science ♦
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 23100 - Biology III: Cell Structure And Function or
- BTNY 42000 - Plant Cellular And Developmental Biology
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-2.00

## 14-15 Credits

### Spring 3rd Year

- BIOL 22100 - Introduction To Microbiology
- Directed Selective - Credit Hours: 6.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

## Fall 4th Year

- AGRY 48000 - Plant Genetics
- AGRY 49800 - Agronomy Senior Seminar
- AGRY 52000 - Principles And Methods Of Plant Breeding
- STAT 30100 - Elementary Statistical Methods
- BIOL 41500 - Introduction To Molecular Biology or
- BTNY 35000 - Biotechnology In Agriculture

## 13 Credits

## Spring 4th Year

- AGRY 52500 - Crop Physiology And Ecology or
- HORT 30100 - Plant Physiology
- Directed Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 14-16 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Soil and Water Sciences, BS**

### **About the Program**

The Soil and Water Sciences option provides a strong science education, while preparing students to apply this knowledge in many technical phases of soil, water resources and environmental management. Opportunities are numerous and encompass a broad range in science, management, and education with diverse applications addressing agricultural water use, food security, soil and water quality and secure water supplies. Students are especially qualified for graduate study in hydrology, water resources, soil chemistry, soil physics, soil microbiology, environmental science, soil mineralogy and genesis, and ecology.

Soil and Water Sciences Website

Soil And Water Sciences Major Change (CODO) Requirements

### **Degree Requirements**

## **120 Credits Required**

### **Departmental/Program Major Courses (38-39 credits)**

#### **Required Major Courses (29-30 credits)**

- AGRY 12500 - Environmental Science And Conservation (satisfies Science, Technology, & Society for core)
- AGRY 25500 - Soil Science ♦
- AGRY 33500 - Weather And Climate
- AGRY 33700 - Environmental Hydrology
- AGRY 36500 - Soil Fertility
- AGRY 39800 - Agronomy Seminar
- AGRY 46500 - Soil Physical Properties
- AGRY 49800 - Agronomy Senior Seminar (Capstone)
- AGRY 56500 - Soils And Landscapes
- AGRY 34900 - Soil Ecology or
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 45000 - Soil Conservation and Water Management or
- AGRY 58500 - Soils And Land Use (Capstone)

#### **Major Selectives (9 credits)**

- Crop or Plant Science Selective - Credit Hours: 3.00
  - Ecology Selective - Credit Hours: 3.00
  - Engineering or Science Selective - Credit Hours: 3.00
- Soil & Water Sciences Supplemental Information



## Other Departmental/Program Course Requirements (70-73 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- BIOL 11000 - Fundamentals Of Biology I and
- BIOL 11100 - Fundamentals Of Biology II  
OR  
BIOL 11000 - Fundamentals Of Biology I and
- BTNY 11000 - Introduction To Plant Science  
OR
- BTNY 12000 - Principles Of Plant Biology I and
- BTNY 12100 - Principles Of Plant Biology II
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- EAPS 11100 - Physical Geology
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- MA 16020 - Applied Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- PHYS 22000 - General Physics or
- PHYS 17200 - Modern Mechanics
- PHYS 22100 - General Physics  
**Genetics or Crop Physiology and Ecology, or Biochemistry Selective - Credit Hours: 3.00**
- AGRY 32000 - Genetics
- AGRY 52500 - Crop Physiology And Ecology
- BCHM 30700 - Biochemistry  
**Agricultural Economics, Economics, Management or Technology Leadership & Innovation Selective -**  
Credit Hours: 3.00
- *AGEC 10000:59999*
- *ECON 10000:59999*
- *MGMT 10000:59999*
- *OLS 10000:59999*
- *TLI 10000:59999*  
**Economics Selective - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)**
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (10-12 credits)

- Elective - Credit Hours: 8.00-12.00

## Grade Requirements

- *Clearly list any/all grade requirements within the program.*

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- *Double-counting policy - where is it allowed and not allowed; specific notes or requirements about courses; repeatable limits, study abroad, etc.*

## Non-course / Non-credit Requirements

- *Degree requirements which are not associated to a course. For example: portfolio, work experience, certifications. Should equal 0 credits.*

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency [website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Additional Information

- *Any additional information that does not fit into any of the categories above.*

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11300 - Introduction To Agronomy Academic Programs
- BIOL 11000 - Fundamentals Of Biology I or
- BTNY 12000 - Principles Of Plant Biology I
- CHM 11100 - General Chemistry ♦
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-16 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦
- MA 16020 - Applied Calculus II or
- MA 16600 - Analytic Geometry And Calculus II
- BIOL 11100 - Fundamentals Of Biology II or
- BTNY 11000 - Introduction To Plant Science or
- BTNY 12100 - Principles Of Plant Biology II
- Economics Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

### 15-17 Credits

### Fall 2nd Year

- AGRY 25500 - Soil Science ♦
- AGRY 12500 - Environmental Science And Conservation
- AGRY 39800 - Agronomy Seminar
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- Crop or Plant Science Selective - Credit Hours: 3.00

### 15 Credits

### Spring 2nd Year

- AGRY 36500 - Soil Fertility

- PHYS 22000 - General Physics
- Oral Communication Selective - Credit Hours: 3.00
- Ecology Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

## 15 Credits

### Fall 3rd Year

- EAPS 11100 - Physical Geology
- PHYS 22100 - General Physics
- AGRY 34900 - Soil Ecology or
- AGRY 38500 - Environmental Soil Chemistry
- Human Cultures: Humanities - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

## 15-16 Credits

### Spring 3rd Year

- AGRY 33700 - Environmental Hydrology
- STAT 30100 - Elementary Statistical Methods
- Genetics or Crop Physiology and Ecology, or Biochemistry Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- AGRY 46500 - Soil Physical Properties
- AGRY 49800 - Agronomy Senior Seminar
- AGRY 56500 - Soils And Landscapes
- AGRY 45000 - Soil Conservation and Water Management or
- AGRY 58500 - Soils And Land Use
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## 13 Credits

### Spring 4th Year

- AGRY 33500 - Weather And Climate
- Engineering or Science Selective - Credit Hours: 3.00
- Agricultural Economics, Economics, Management or Technology Leadership & Innovation Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Electives - Credit Hours: 3.00-5.00

15-17 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

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The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Minor

### Crop Science Minor

#### Requirements for the Minor (18 credits)

##### Required Courses (6 credits)

- AGRY 25500 - Soil Science
- AGRY 10500 - Crop Production or
- AGRY 37500 - Crop Production Systems

##### Selective Courses (12 credits)

- AGRY 10500 - Crop Production \*
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 37500 - Crop Production Systems \*
- AGRY 48000 - Plant Genetics
- AGRY 48500 - Precision Crop Management
- AGRY 50500 - Forage Management
- AGRY 51500 - Plant Mineral Nutrition
- AGRY 52000 - Principles And Methods Of Plant Breeding
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- BTNY 35000 - Biotechnology In Agriculture
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- AGRY 52500 - Crop Physiology And Ecology or
- HORT 30100 - Plant Physiology

## Notes

- Departmental permission is not required to enroll in this minor.
- Students majoring in the Department of Agronomy cannot obtain a Crop Science minor.
- \* If not used above as a required course.

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Soil Science Minor

### Requirements for the Minor (18 credits)

#### Required Courses (6 credits)

- AGRY 25500 - Soil Science
- AGRY 36500 - Soil Fertility

#### Selective Courses (12 credits)

- AGRY 12500 - Environmental Science And Conservation
- AGRY 33500 - Weather And Climate
- AGRY 33700 - Environmental Hydrology
- AGRY 33800 - Environmental Field Skills

- AGRY 34900 - Soil Ecology
- AGRY 35500 - Soil Morphology And Geography
- AGRY 45000 - Soil Conservation and Water Management
- AGRY 46500 - Soil Physical Properties
- AGRY 54000 - Soil Chemistry
- AGRY 54400 - Environmental Organic Chemistry
- AGRY 54500 - Remote Sensing Of Land Resources
- AGRY 55500 - Soil And Plant Analysis
- AGRY 56000 - Soil Physics
- AGRY 56500 - Soils And Landscapes
- AGRY 58000 - Soil Microbiology
- AGRY 58500 - Soils And Land Use

## Notes

- Departmental permission is not required to enroll in this minor.
- Students majoring in the Department of Agronomy cannot obtain a Soil Science minor.

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Program Information

### Agronomy Supplemental Information

#### Agronomy Major Selectives

##### Ecology or Plant Ecology Selective (3 Credits)

- AGRY 34900 - Soil Ecology
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 28600 - Introduction To Ecology And Evolution
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- BTNY 30200 - Plant Ecology
- EEE 30000 - Environmental And Ecological Systems Modeling
- ENTM 31100 - Insect Ecology
- FNR 20100 - Marine Biology
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 35900 - Spatial Ecology And GIS
- SFS 30100 - Agroecology



## Concentration Specific Selectives

### Agronomic Business and Marketing Concentration

#### Agronomy Crops Selective (3 Credits)

- AGRY 10500 - Crop Production
- AGRY 21000 - Fundamentals Of Turfgrass Culture
- AGRY 21100 - Fundamentals Of Turfgrass Culture Laboratory
- AGRY 28500 - World Crop Adaptation And Distribution
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 37500 - Crop Production Systems
- AGRY 48000 - Plant Genetics
- AGRY 50500 - Forage Management
- AGRY 51000 - Turfgrass Science
- AGRY 51100 - Population Genetics
- AGRY 51200 - Integrated Turfgrass Systems
- AGRY 51500 - Plant Mineral Nutrition
- AGRY 52000 - Principles And Methods Of Plant Breeding
- AGRY 52500 - Crop Physiology And Ecology
- AGRY 55000 - Field Crops Breeding Techniques
- ANSC 51100 - Population Genetics

### Agronomy: International Agronomy Concentration

#### Agriculture or Science Selectives (6 Credits)

- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 45100 - Applied Econometrics
- AGRY 27000 - Forest Soils
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 46500 - Soil Physical Properties
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- BCHM 10000 - Introduction To Biochemistry
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution

- BTNY 11000 - Introduction To Plant Science
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- CHM 22400 - Introductory Quantitative Analysis
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- CHM 26100 - Organic Chemistry I
- CHM 26200 - Organic Chemistry II
- CHM 26300 - Organic Chemistry Laboratory I
- CHM 26400 - Organic Chemistry Laboratory II
- CS 18000 - Problem Solving And Object-Oriented Programming
- EAPS 11100 - Physical Geology
- EAPS 11200 - Earth Through Time
- EAPS 22100 - Survey Of Atmospheric Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior
- FNR 20100 - Marine Biology
- FNR 23000 - The World's Forests And Society
- FNR 24000 - Wildlife In America
- FNR 30500 - Conservation Genetics
- FNR 35700 - Fundamental Remote Sensing
- HONR 49900 - Honors Research Project
- HORT 30100 - Plant Physiology
- MA 16020 - Applied Calculus II
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- NRES 23000 - Survey Of Meteorology
- NRES 25500 - Soil Science
- PHYS 17200 - Modern Mechanics
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- PHYS 23300 - Physics For Life Sciences I
- PHYS 23400 - Physics For Life Sciences II
- PHYS 24100 - Electricity And Optics
- STAT 50200 - Experimental Statistics II
- STAT 51100 - Statistical Methods
- STAT 51200 - Applied Regression Analysis

### Conversation Language Selective (2 Credits)

- FR 11200 - Elementary French Conversation

- FR 21200 - Intermediate French Conversation
- GER 11200 - Elementary German Conversation
- GER 21200 - Intermediate German Conversation
- ITAL 11200 - Elementary Italian Conversation
- ITAL 21200 - Intermediate Italian Conversation
- RUSS 11100 - Conversation Supplement To Russian Level I

## College of Agriculture: Additional Mathematics or Science Selectives

- AGR 33300 - Data Science For Agriculture
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 45100 - Applied Econometrics
- AGRY 12500 - Environmental Science And Conservation
- AGRY 25500 - Soil Science
- AGRY 27000 - Forest Soils
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 46500 - Soil Physical Properties
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- BCHM 10000 - Introduction To Biochemistry
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- BTNY 11000 - Introduction To Plant Science
- BTNY 26200 - Plant Structure And Tissue Biology
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 53500 - Plant Disease Epidemiology
- CHM 22400 - Introductory Quantitative Analysis
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- CHM 26100 - Organic Chemistry I
- CHM 26200 - Organic Chemistry II
- CHM 26300 - Organic Chemistry Laboratory I
- CHM 26400 - Organic Chemistry Laboratory II
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- CS 18000 - Problem Solving And Object-Oriented Programming

- EAPS 11100 - Physical Geology
- EAPS 11200 - Earth Through Time
- EAPS 12500 - Environmental Science And Conservation
- EAPS 22100 - Survey Of Atmospheric Science
- ENTM 10200 - The Practice Of Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior
- ENTM 24200 - Data Science
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 30100 - Experimentation And Analysis
- ENTM 31200 - Plant-Insect Chemical Ecology
- ENTM 32810 - Practical Molecular Biology
- ENTM 35300 - Insecticides And Environment
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 12500 - Environmental Science And Conservation
- FNR 20100 - Marine Biology
- FNR 23000 - The World's Forests And Society
- FNR 24000 - Wildlife In America
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 30500 - Conservation Genetics
- FNR 35700 - Fundamental Remote Sensing
- HONR 49900 - Honors Research Project (Title: Human Diseases and Disorders)
- HORT 10100 - Fundamentals Of Horticulture
- HORT 30100 - Plant Physiology
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- NRES 12500 - Environmental Science And Conservation
- NRES 23000 - Survey Of Meteorology
- NRES 25500 - Soil Science
- PHYS 17200 - Modern Mechanics
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- PHYS 23300 - Physics For Life Sciences I
- PHYS 23400 - Physics For Life Sciences II
- PHYS 24100 - Electricity And Optics
- STAT 22500 - Introduction To Probability Models
- STAT 50200 - Experimental Statistics II
- STAT 51100 - Statistical Methods
- STAT 51200 - Applied Regression Analysis

## **Plant Genetics, Plant Breeding & Biotechnology Supplemental Information**

## Directed Selective (12 Credits)

- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 33100 - Principles Of Industrial Selling
- AGEC 42400 - Financial Management Of Agricultural Business
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 37500 - Crop Production Systems
- AGRY 48500 - Precision Crop Management
- AGRY 50500 - Forage Management
- AGRY 51800 - Plant Physiology And Biotechnology Research Techniques
- AGRY 55000 - Field Crops Breeding Techniques
- ANSC 51100 - Population Genetics
- BCHM 56100 - General Biochemistry I
- BCHM 56200 - General Biochemistry II
- BIOL 42000 - Eukaryotic Cell Biology
- BIOL 44100 - Biology Senior Seminar In Genetics
- BIOL 54200 - Modular Upper-Division Laboratory Course
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 52500 - Intermediate Plant Pathology
- BTNY 53500 - Plant Disease Epidemiology
- BTNY 55300 - Plant Growth And Development
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- MA 26500 - Linear Algebra

## Soil & Water Sciences Supplemental Information

### Crop or Plant Science Selective (3 Credits)

- BTNY 21100:59999
- AGRY 10500 - Crop Production
- AGRY 21000 - Fundamentals Of Turfgrass Culture
- AGRY 21100 - Fundamentals Of Turfgrass Culture Laboratory
- AGRY 28500 - World Crop Adaptation And Distribution
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 50500 - Forage Management
- AGRY 51000 - Turfgrass Science
- AGRY 51100 - Population Genetics
- AGRY 51200 - Integrated Turfgrass Systems
- AGRY 51500 - Plant Mineral Nutrition
- AGRY 52000 - Principles And Methods Of Plant Breeding
- AGRY 52500 - Crop Physiology And Ecology
- AGRY 55000 - Field Crops Breeding Techniques
- HORT 20100 - Plant Propagation

- HORT 21700 - Woody Landscape Plants

## Ecology Selective (3 Credits)

- AGRY 34900 - Soil Ecology
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 28600 - Introduction To Ecology And Evolution
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- BTNY 30200 - Plant Ecology
- EEE 30000 - Environmental And Ecological Systems Modeling
- ENTM 31100 - Insect Ecology
- FNR 20100 - Marine Biology
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 35900 - Spatial Ecology And GIS

## Engineering or Science Selective (3 Credits)

- ABE 32500 - Soil And Water Resource Engineering
- ABE 52200 - Ecohydrology
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGRY 25500 - Soil Science
- AGRY 27000 - Forest Soils
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGECE 45100 - Applied Econometrics
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- CE 35000 - Introduction To Environmental And Ecological Engineering
- CE 35500 - Engineering Environmental Sustainability
- CE 54200 - Hydrology
- CHM 22400 - Introductory Quantitative Analysis
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- CHM 25700 - Organic Chemistry

- CHM 25701 - Organic Chemistry Laboratory
- CHM 26100 - Organic Chemistry I
- CHM 26200 - Organic Chemistry II
- CHM 26300 - Organic Chemistry Laboratory I
- CHM 26400 - Organic Chemistry Laboratory II
- EAPS 11100 - Physical Geology
- EAPS 11200 - Earth Through Time
- EAPS 22100 - Survey Of Atmospheric Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- NRES 25500 - Soil Science
- PHYS 17200 - Modern Mechanics
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- PHYS 24100 - Electricity And Optics
- STAT 50200 - Experimental Statistics II
- STAT 51100 - Statistical Methods
- STAT 51200 - Applied Regression Analysis

## Department of Animal Sciences

### Overview

The Purdue University Department of Animal Sciences promotes leadership and inspiration to educate students, enabling them to anticipate and effectively respond to challenges facing the global animal industries. The Animal Sciences faculty conducts relevant scientific research and facilitates technology transfer for efficient and sustainable production of high quality animal products, optimizing animal well-being, enhancing the human diet, and advancing sound environmental practices.

The vision of the Department of Animal Sciences is simple. We desire to be the "place to go" for the citizens of Indiana and beyond for knowledge in animal sciences. This includes students, commodity groups, industry partners, government agencies, consumers, and many others. Our shared goals are to:

- provide students with a rigorous and relevant education, preparing them for a lifetime of learning;
- achieve scientific preeminence in selected areas, and develop teams to identify and solve real world problems; and
- meet the needs of our diverse clientele making the best use of emerging technologies.

The Animal Sciences faculty has expertise in the disciplines of growth and development, nutrition, breeding and genetics, physiology, management, and animal well-being and behavior. In addition, scientists in the USDA Livestock Behavior Unit associated with Purdue are adjunct faculty members.

Concentrations include:

- Animal Agribusiness
- Behavior/Well-Being
- Biosciences
- Pre-Veterinary Medicine
- Production & Industry

## **Prospective Students (website)**

## **Current Students (website)**

## **Faculty (website)**

## **Animal Sciences (website)**

## **Contact Information**

### Department of Animal Sciences

Creighton Hall of Animal Sciences

270 S. Russell Street

West Lafayette, IN 47907-2041

765-494-4843

Email: [ansc4you@purdue.edu](mailto:ansc4you@purdue.edu)

Main Office: 1014 Creighton Hall of Animal Sciences

## **Baccalaureate**

## **Animal Sciences: Animal Agribusiness Concentration, BS**

### **About the Program**

This Department of Animal Sciences option is best suited for those interested in business aspects of the animal industry and gaining knowledge in accounting, sales and marketing, and business management. Graduates are high in demand in sales and service areas of animal health products; feed, production, equipment firms; sales companies; and animal representatives for banks and lending organizations, insurance companies, marketing, advertising, and public relations agencies. You may be well suited for animal agribusiness if you enjoy meeting people, have a good oral communication skills as well as a proficiency in writing. Experience with raising and managing of animals is essential



since you will be expected to interact and relate to managers, veterinarians, businessmen, and owners of animal enterprises. An interest in economics, marketing, and business management is important.

Animal Sciences

See ANSC Undergraduate Student Handbook for more information.

Animal Sciences Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (75 credits)

### Required Major Courses (30 credits)

- ANSC 10200 - Introduction To Animal Agriculture (satisfies Science, Technology & Society for core)
- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 24000 - Principles Of Animal Production
- ANSC 25500 - Principles Of Animal Products
- ANSC 31100 - Animal Breeding And Genetics
- ANSC 33300 - Physiology Of Reproduction
- ANSC 48100 - Contemporary Issues In Animal Sciences (Capstone)  
**Animal Management Selective** - Credit Hours: 3.00
- ANSC 44000 - Horse Management
- ANSC 44100 - Beef Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management
- ANSC 44600 - Companion Animal Management

## Animal Agribusiness Concentration Requirements (45 credits)

### Concentration Required Courses (37 credits)

- AGECE 20201 - Introduction To Data Analytics For Agricultural Business
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 33000 - Management Methods For Agricultural Business
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MGMT 20000 - Introductory Accounting or

- MGMT 21200 - Business Accounting  
Agricultural Economics, Economics, or Management Selective - Credit Hours: 12.00
- AGECE 22000 - Economics Of Agricultural Markets
- AGECE 30500: 49800
- ECON 21900:49900
- MGMT 20100:49000

## Animal Sciences Restricted Selectives (10 credits)

10 credits from a minimum of 3 of the following course groupings

### Animal Behavior Well-Being Selective

- ANSC 30300 - Animal Behavior
  - ANSC 40400 - Animal Welfare
- ### Animal Genetics Selective
- AGRY 32000 - Genetics
  - AGRY 32100 - Genetics Laboratory
  - ANSC 51300 - Design Of Animal Breeding Programs
  - ANSC 51400 - Animal Biotechnology
  - BIOL 41500 - Introduction To Molecular Biology

### Animal Nutrition Selective

- ANSC 32500 - Applied Ruminant Nutrition
- ANSC 32600 - Applied Non-ruminant Nutrition
- ANSC 52200 - Monogastric Nutrition
- ANSC 52400 - Ruminant Nutrition And Physiology

### Animal Physiology Selective

- ANSC 33200 - Environmental Physiology Of Domestic Animals
- ANSC 41500 - Advanced Animal Physiology
- ANSC 42500 - Ruminant Reproductive Farm Management
- ANSC 42600 - Non-ruminant Reproductive Farm Management
- ANSC 55500 - Animal Growth And Development

### Animal Products Selective

- ANSC 30100 - Animal Growth, Development, And Evaluation
- ANSC 35100 - Meat Science
- ANSC 35101 - Meat Science Laboratory
- ANSC 36000 - Muscle Food Production And Safety
- ANSC 55200 - Advanced Meat Science

**Animal Management Selective (NOTE: This would be in addition to the required course)** - Credit Hours: 3.00

- ANSC 44000 - Horse Management
- ANSC 44100 - Beef Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management
- ANSC 44600 - Companion Animal Management

## Other Departmental/Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University

- AGR 11400 - Introduction To Animal Sciences Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)  
**Economics Selective - Credit Hours: 3.00** (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (8-9 credits)

- Electives - Credit Hours: 8.00-9.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.
- ANSC courses must be at 2.0 or higher GPA to earn a BS in Animal Sciences

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11400 - Introduction To Animal Sciences Academic Programs
- ANSC 10200 - Introduction To Animal Agriculture
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11100 - General Chemistry ♦
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- BIOL 11100 - Fundamentals Of Biology II ♦
- CHM 11200 - General Chemistry ♦
- MA 16010 - Applied Calculus I
- Oral Communication Selective - Credit Hours: 3.00

### 16 Credits

### Fall 2nd Year

- AGECE 20201 - Introduction To Data Analytics For Agricultural Business
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 25500 - Principles Of Animal Products
- Economics Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

### 18 Credits

### Spring 2nd Year

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 24000 - Principles Of Animal Production
- CHM 25700 - Organic Chemistry

- STAT 30100 - Elementary Statistical Methods

## 17 Credits

### Fall 3rd Year

- AGECE 33000 - Management Methods For Agricultural Business
- ANSC 33300 - Physiology Of Reproduction
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- Agricultural Economics, Economics, or Management Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- ANSC 31100 - Animal Breeding And Genetics
- Agricultural Economics, Economics, or Management Selective - Credit Hours: 3.00
- Animal Sciences Restricted Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

### Fall 4th Year

- ANSC 48100 - Contemporary Issues In Animal Sciences
- Animal Sciences Restricted Selective - Credit Hours: 3.00
- Animal Management Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Electives - Credit Hours: 3.00

## 13 Credits

### Spring 4th Year

- Animal Sciences Restricted Selective - Credit Hours: 4.00
- Agricultural Economics, Economics, or Management Selective - Credit Hours: 6.00
- Electives - Credit Hours: 0.00-1.00

## 10-11 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Animal Sciences: Animal Production and Industry Concentration, BS**

### About the Program

The Purdue University Department of Animal Sciences promotes leadership and inspiration to educate students, enabling them to anticipate and effectively respond to challenges facing the global animal industries. The Animal Sciences faculty conducts relevant scientific research and facilitates technology transfer for efficient and sustainable production of high quality animal products, optimizing animal well-being, enhancing the human diet, and advancing sound environmental practices.

The vision of the Department of Animal Sciences is simple. We desire to be the "place to go" for the citizens of Indiana and beyond for knowledge in animal sciences. This includes students, commodity groups, industry partners, government agencies, consumers, and many others. Our shared goals are to: 1) provide students with a rigorous and relevant education, preparing them for a lifetime of learning; 2) achieve scientific preeminence in selected areas, and develop teams to identify and solve real world problems; and 3) the needs of our diverse clientele making the best use of emerging digital technologies. The Animal Sciences faculty has expertise in the disciplines of growth and development, nutrition, breeding and genetics, physiology, management, animal well-being and behavior. In addition, scientists in the USDA Livestock Behavior Unit associated with Purdue are adjunct faculty members.

- Students in the *Animal Agribusiness* concentration choose 22 credit hours of course work in economics and business management.
- Students in the *Animal Production and Industry* concentration choose 22 credits hours of work in animal products, financial management, production, biochemistry, and microbiology.

- Students in the *Behavior/Well-being* concentration choose 18 credit hours of course work in biochemistry, behavior, and well-being.
- Students in the *Biosciences* concentration choose 16 credit hours of course work in upper division biological science courses, organic chemistry, biochemistry and physics.
- Students in the *Pre-Veterinary Medicine* concentration choose 25 credit hours of work in biology, chemistry, biochemistry, and physics.

Animal Sciences Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (71 credits)

### Required Major Courses (30 credits)

- ANSC 10200 - Introduction To Animal Agriculture (satisfies Science, Technology & Society for core)
- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 24000 - Principles Of Animal Production
- ANSC 25500 - Principles Of Animal Products
- ANSC 31100 - Animal Breeding And Genetics
- ANSC 33300 - Physiology Of Reproduction
- ANSC 48100 - Contemporary Issues In Animal Sciences (Capstone)
- **Animal Management Selective** - Credit Hours: 3.00
  - ANSC 44000 - Horse Management
  - ANSC 44100 - Beef Management
  - ANSC 44200 - Sheep Management
  - ANSC 44300 - Swine Management
  - ANSC 44400 - Dairy Management
  - ANSC 44500 - Commercial Poultry Management
  - ANSC 44600 - Companion Animal Management

## Animal Production and Industry Concentration Requirements (41 credits)

### Required Concentration Courses (31 credits)

- BCHM 30700 - Biochemistry
- BIOL 22100 - Introduction To Microbiology ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry
- MA 15800 - Precalculus - Functions And Trigonometry or
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- **Animal Products Selective** - Credit Hours: 3.00
  - ANSC 30100 - Animal Growth, Development, And Evaluation



- ANSC 35100 - Meat Science
- ANSC 35101 - Meat Science Laboratory
- ANSC 36000 - Muscle Food Production And Safety
- ANSC 55200 - Advanced Meat Science

Financial Management Selective - Credit Hours: 3.00

- AGECE 33000 - Management Methods For Agricultural Business
- CSR 34200 - Personal Finance
- MGMT 20000 - Introductory Accounting
- MGMT 21200 - Business Accounting
- Enterprise Management Selective - Credit Hours: 6.00
- Production Management Selective - Credit Hours: 3.00

## Animal Sciences Restricted Selectives (10 credits)

10 credits from a minimum of 3 of the following course groupings

### **Animal Behavior/Well-Being**

- ANSC 30300 - Animal Behavior
- ANSC 40400 - Animal Welfare

### Animal Genetics Selective

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- ANSC 51300 - Design Of Animal Breeding Programs
- ANSC 51400 - Animal Biotechnology
- BIOL 41500 - Introduction To Molecular Biology

### Animal Nutrition Selective

- ANSC 32500 - Applied Ruminant Nutrition
- ANSC 32600 - Applied Non-ruminant Nutrition
- ANSC 52200 - Monogastric Nutrition
- ANSC 52400 - Ruminant Nutrition And Physiology

### Animal Physiology Selective

- ANSC 33200 - Environmental Physiology Of Domestic Animals
- ANSC 41500 - Advanced Animal Physiology
- ANSC 42500 - Ruminant Reproductive Farm Management
- ANSC 42600 - Non-ruminant Reproductive Farm Management
- ANSC 55500 - Animal Growth And Development

**Animal Management Selective** (NOTE: This would be in addition to the required course) - Credit Hours: 3.00

- ANSC 44000 - Horse Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management
- ANSC 44600 - Companion Animal Management

## Other Departmental/Program Course Requirements (40-41 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11400 - Introduction To Animal Sciences Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦
- BIOL 22100 - Introduction To Microbiology ♦ (satisfies Science #2 for core)
- STAT 30100 - Elementary Statistical Methods
  - Economics Selective - **Credit Hours: 3.00** (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (8-9 credits)

- Electives - Credit Hours: 8.00-9.00

## Supplemental List

Animal Sciences Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.
- Minimum 2.0 GPA required in Animal Science courses.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11400 - Introduction To Animal Sciences Academic Programs
- ANSC 10200 - Introduction To Animal Agriculture
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11100 - General Chemistry ♦
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-15 Credits

### Spring 1st Year

- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- BIOL 11100 - Fundamentals Of Biology II ♦
- CHM 11200 - General Chemistry ♦
- MA 15800 - Precalculus - Functions And Trigonometry or
- MA 16010 - Applied Calculus I
- Oral Communication Selective - Credit Hours: 3.00

### 16 Credits

### Fall 2nd Year

- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 24000 - Principles Of Animal Production
- Economics Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- ANSC 25500 - Principles Of Animal Products
- CHM 25700 - Organic Chemistry
- STAT 30100 - Elementary Statistical Methods
- Enterprise Management Selective - Credit Hours: 3.00
- Financial Management Selective - Credit Hours: 3.00

## 16 Credits

### Fall 3rd Year

- ANSC 33300 - Physiology Of Reproduction
- BCHM 30700 - Biochemistry
- Animal Restricted Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- ANSC 31100 - Animal Breeding And Genetics
- ANSC Restricted Selective - Credit Hours: 4.00
- ANSC Restricted Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Production Management Selective - Credit Hours: 3.00

## 17 Credits

### Fall 4th Year

- ANSC 48100 - Contemporary Issues In Animal Sciences (Capstone)
- BIOL 22100 - Introduction To Microbiology
- Animal Management Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 14 Credits

### Spring 4th Year

- Animal Products Selective - Credit Hours: 3.00
- Enterprise Management - Credit Hours: 3.00

- Electives - Credit Hours: 5.00-6.00

## 11-12 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Animal Sciences: Behavior/Well-Being Concentration, BS**

### About the Program

Students desiring a balance of animal production, behavioral sciences, and well-being are best served by this option in the department of Animal Sciences. Careers available as managers of animal production units (e.g., beef cow-calf or feed lot manager, flock supervisor, swine manager or horse trainer or breeder). Limited career opportunities may be available as an animal trainer, zoo environmental enhancement specialist, companion animal consultant, breed association animal well-being specialist, and pet safety education specialist for a humane society. Students interested in advanced studies can become animal behavior consultants or scientists at universities.

Animal Sciences

See ANSC Undergraduate Student Handbook for more information.

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (73 credits)

### Required Major Courses (30 credits)

- ANSC 10200 - Introduction To Animal Agriculture (satisfies Science, Technology & Society for core)
- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 24000 - Principles Of Animal Production
- ANSC 25500 - Principles Of Animal Products
- ANSC 31100 - Animal Breeding And Genetics
- ANSC 33300 - Physiology Of Reproduction
- ANSC 48100 - Contemporary Issues In Animal Sciences (Capstone)  
**Animal Management Selective** - Credit Hours: 3.00
- ANSC 44000 - Horse Management
- ANSC 44100 - Beef Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management
- ANSC 44600 - Companion Animal Management

## Behavior/Well-Being Concentration Requirements (43 credits)

### Required Concentration Courses (33 Credits)

- BCHM 30700 - Biochemistry
- CHM 11500 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11600 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- CHM 25700 - Organic Chemistry
- PSY 12000 - Elementary Psychology
- Behavior/Well-Being Selective - Credit Hours: 12.00 (see Animal Sciences Supplemental List)

### Animal Sciences Restricted Selectives (10 credits)

- **Animal Behavior Well-Being Selective - REQUIRED for this concentration - Credit Hours: 6.00**
- ANSC 30300 - Animal Behavior
- ANSC 40400 - Animal Welfare
- **Choose total of 4 credits from 2 different sections below**

### Animal Genetics Selective

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- ANSC 51300 - Design Of Animal Breeding Programs
- ANSC 51400 - Animal Biotechnology
- BIOL 41500 - Introduction To Molecular Biology

### Animal Nutrition Selective

- ANSC 32500 - Applied Ruminant Nutrition
- ANSC 32600 - Applied Non-ruminant Nutrition
- ANSC 52200 - Monogastric Nutrition
- ANSC 52400 - Ruminant Nutrition And Physiology

### Animal Physiology Selective

- ANSC 33200 - Environmental Physiology Of Domestic Animals
- ANSC 41500 - Advanced Animal Physiology
- ANSC 42500 - Ruminant Reproductive Farm Management
- ANSC 42600 - Non-ruminant Reproductive Farm Management
- ANSC 55500 - Animal Growth And Development

### Animal Products Selective

- ANSC 30100 - Animal Growth, Development, And Evaluation
- ANSC 35100 - Meat Science
- ANSC 35101 - Meat Science Laboratory
- ANSC 36000 - Muscle Food Production And Safety
- ANSC 55200 - Advanced Meat Science

**Animal Management Selective** (NOTE: This would be in addition to the required course) - Credit Hours: 3.00

- ANSC 44000 - Horse Management
- ANSC 44100 - Beef Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management
- ANSC 44600 - Companion Animal Management

## Other Departmental /Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11400 - Introduction To Animal Sciences Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- **Economics Selective - Credit Hours: 3.00** (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00



- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level)- Credit Hours: 3.00

## Electives (10-11 credits)

- Electives - Credit Hours: 10.00-11.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.
- 2.0 GPA required for Animal Science Courses.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11400 - Introduction To Animal Sciences Academic Programs

- ANSC 10200 - Introduction To Animal Agriculture
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11500 - General Chemistry ♦
- MA 16010 - Applied Calculus I

15 Credits

### Spring 1st Year

- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- BIOL 11100 - Fundamentals Of Biology II ♦
- CHM 11600 - General Chemistry ♦
- Written Communication Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 1.00

### Fall 2nd Year

- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 24000 - Principles Of Animal Production
- CHM 25700 - Organic Chemistry
- PSY 12000 - Elementary Psychology
- Oral Communication Selective - Credit Hours: 3.00

16 Credits

### Spring 2nd Year

- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 25500 - Principles Of Animal Products
- STAT 30100 - Elementary Statistical Methods
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Economics Selective - Credit Hours: 3.00

16 Credits

### Fall 3rd Year

- ANSC 30300 - Animal Behavior
- ANSC 31100 - Animal Breeding And Genetics
- ANSC 33300 - Physiology Of Reproduction
- BCHM 30700 - Biochemistry
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

16 Credits

### Spring 3rd Year

- ANSC 40400 - Animal Welfare
- Animal Sciences Restricted Selective - Credit Hours: 2.00
- Animal Behavior/Well-being Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 14 Credits

### Fall 4th Year

- ANSC 48100 - Contemporary Issues In Animal Sciences (Capstone)
- Animal Behavior/Well-being Selective - Credit Hours: 3.00
- Animal Management Selective - Credit Hours: 3.00
- Animal Sciences Restricted Selective - Credit Hours: 2.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

## 14 Credits

### Spring 4th Year

- Animal Behavior/Well-being Selective - Credit Hours: 6.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Electives - Credit Hours: 4.00-5.00

## 13-14 Credits

### Pre-Requisite Information

For pre-requisite information, [click here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Animal Sciences: Biosciences Concentration, BS

### About the Program

The Department of Animal Sciences offers this specialization that is intended for students seeking careers in research or technical services related to animal nutrition, growth and development, animal genetics, reproduction, animal well-being, and management. Those in this specialization should have a strong interest in and curiosity in discovery and have enjoyed their high school biology, chemistry, mathematics, and physics courses. Students who aspire to careers in research and teaching in colleges and universities or in agribusinesses should enroll in this option. It can also be used as an excellent preparation for professional careers such as human medical doctors, veterinarians, dentists, and employment in the nutrition, genomics, and pharmaceutical industries. Graduates continuing for the M.S. or Ph.D. degrees in animal sciences qualify for numerous research, teaching, or extension positions in industry, government, universities, and colleges.

Animal Sciences

See ANSC Undergraduate Student Handbook for more information.

Animal Sciences Major Change (CODO) Requirements

### Degree Requirements

## 120 Credits Required

### Departmental/Program Major Courses (71 credits)

#### Required Major Courses (30 credits)

- ANSC 10200 - Introduction To Animal Agriculture (satisfies Science, Technology & Society for core)
- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 24000 - Principles Of Animal Production

- ANSC 25500 - Principles Of Animal Products
- ANSC 31100 - Animal Breeding And Genetics
- ANSC 33300 - Physiology Of Reproduction
- ANSC 48100 - Contemporary Issues In Animal Sciences (Capstone)  
**Animal Management Selective** - Credit Hours: 3.00
- ANSC 44000 - Horse Management
- ANSC 44100 - Beef Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management
- ANSC 44600 - Companion Animal Management

## Biosciences Concentration Requirements (41 credits)

### Concentration Required Courses (31 credits)

- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- CHM 11500 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11600 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- Science Selectives - Credit Hours: 12.00 (See Animal Sciences Supplemental for Bioscience Concentration Science Selectives)

### Animal Science Restricted Selectives (10 credits)

10 credits from a minimum of 3 of the following course groupings

#### Animal Behavior Well-Being Selective

- ANSC 30300 - Animal Behavior
- ANSC 40400 - Animal Welfare

#### Animal Genetics Selective

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- ANSC 51300 - Design Of Animal Breeding Programs
- ANSC 51400 - Animal Biotechnology
- BIOL 41500 - Introduction To Molecular Biology

#### Animal Nutrition Selective

- ANSC 32500 - Applied Ruminant Nutrition
- ANSC 32600 - Applied Non-ruminant Nutrition
- ANSC 52200 - Monogastric Nutrition
- ANSC 52400 - Ruminant Nutrition And Physiology

#### Animal Physiology Selective

- ANSC 33200 - Environmental Physiology Of Domestic Animals
- ANSC 41500 - Advanced Animal Physiology
- ANSC 42500 - Ruminant Reproductive Farm Management
- ANSC 42600 - Non-ruminant Reproductive Farm Management
- ANSC 55500 - Animal Growth And Development

#### Animal Products Selective

- ANSC 30100 - Animal Growth, Development, And Evaluation
- ANSC 35100 - Meat Science
- ANSC 35101 - Meat Science Laboratory
- ANSC 36000 - Muscle Food Production And Safety
- ANSC 55200 - Advanced Meat Science

**Animal Management Selective** (NOTE: This would be in addition to the required course) - Credit Hours: 3.00

- ANSC 44000 - Horse Management
- ANSC 44100 - Beef Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management
- ANSC 44600 - Companion Animal Management

### Other Departmental/Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11400 - Introduction To Animal Sciences Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- **Economics Selective - Credit Hours: 3.00** (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

### Electives (12-13 credits)

- Electives - Credit Hours: 12.00-13.00

### GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.
- Minimum 2.0 GPA required in Animal Science courses.

### College of Agriculture Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)



- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11400 - Introduction To Animal Sciences Academic Programs
- ANSC 10200 - Introduction To Animal Agriculture
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11500 - General Chemistry ♦
- MA 16010 - Applied Calculus I

### 15 Credits

### Spring 1st Year

- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- BIOL 11100 - Fundamentals Of Biology II ♦
- CHM 11600 - General Chemistry ♦
- Written Communication Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 2.00

## 16-17 Credits

### Fall 2nd Year

- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 24000 - Principles Of Animal Production
- CHM 25700 - Organic Chemistry
- Economics Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

## 15 Credits

### Spring 2nd Year

- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 25500 - Principles Of Animal Products
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00
- Science Selective - Credit Hours: 3.00

## 16 Credits

### Fall 3rd Year

- ANSC 33300 - Physiology Of Reproduction
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- STAT 30100 - Elementary Statistical Methods
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science Selective - Credit Hours: 3.00

## 16 Credits

### Spring 3rd Year

- ANSC 31100 - Animal Breeding And Genetics
- Animal Sciences Restrictive Selective - Credit Hours: 4.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science Selective - Credit Hours: 3.00

## 14 Credits

### Fall 4th Year

- ANSC 48100 - Contemporary Issues In Animal Sciences (Capstone)
- Animal Management Selective - Credit Hours: 3.00
- Animal Science Restricted Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

## Spring 4th Year

- Animal Sciences Restricted Selective - Credit Hours: 3.00
- Science Selectives - Credit Hours: 3.00
- Electives - Credit Hours: 5.00-6.00

## 11-12 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Animal Sciences: Pre-Veterinary Medicine Concentration, BS**

## About the Program

The Department of Animal Sciences offers this concentration that is intended for students seeking careers in veterinary medicine, research, or technical services related to animal nutrition, growth and development, animal genetics, reproduction, animal well-being, and management. Those in this concentration should have a strong interest in and curiosity in discovery and have enjoyed their high school biology, chemistry, mathematics, and physics courses. This concentration can be used as excellent preparation for professional careers such as human medical doctors, veterinarians, dentists, and employment in the nutrition, genomics, and pharmaceutical industries.

Animal Sciences Website

See ANSC Undergraduate Student Handbook for more information.

Animal Sciences Major Change (CODO) Requirements

## Degree Requirements

### 120 Credits Required

#### Departmental/Program Major Courses (79 credits)

##### Required Major Courses (30 credits)

- ANSC 10200 - Introduction To Animal Agriculture (satisfies Science, Technology, & Society for core)
- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 24000 - Principles Of Animal Production
- ANSC 25500 - Principles Of Animal Products
- ANSC 31100 - Animal Breeding And Genetics
- ANSC 33300 - Physiology Of Reproduction
- ANSC 48100 - Contemporary Issues In Animal Sciences (Capstone)
- **Animal Management Selective** - Credit Hours: 3.00
- ANSC 44000 - Horse Management
- ANSC 44100 - Beef Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management
- ANSC 44600 - Companion Animal Management

#### Pre-Veterinary Medicine Concentration Requirements (49 credits)

##### Concentration Required Courses (39 Credits)

- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory

- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- CHM 11500 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11600 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- VM 10200 - Careers In Veterinary Medicine

## Animal Sciences Restricted Selectives (10 credits)

10 credits from a minimum of 3 of the following course groupings

### Animal Behavior Well-Being Selective

- ANSC 30300 - Animal Behavior
- ANSC 40400 - Animal Welfare

### Animal Genetics Selective

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- ANSC 51300 - Design Of Animal Breeding Programs
- ANSC 51400 - Animal Biotechnology
- BIOL 41500 - Introduction To Molecular Biology

### Animal Nutrition Selective

- ANSC 32500 - Applied Ruminant Nutrition
- ANSC 32600 - Applied Non-ruminant Nutrition
- ANSC 52200 - Monogastric Nutrition
- ANSC 52400 - Ruminant Nutrition And Physiology

### Animal Physiology Selective

- ANSC 33200 - Environmental Physiology Of Domestic Animals
- ANSC 41500 - Advanced Animal Physiology
- ANSC 42500 - Ruminant Reproductive Farm Management
- ANSC 42600 - Non-ruminant Reproductive Farm Management
- ANSC 55500 - Animal Growth And Development

### Animal Products Selective

- ANSC 30100 - Animal Growth, Development, And Evaluation
- ANSC 35100 - Meat Science
- ANSC 35101 - Meat Science Laboratory
- ANSC 36000 - Muscle Food Production And Safety
- ANSC 55200 - Advanced Meat Science

**Animal Management Selective** (NOTE: This would be in addition to the required course) - Credit Hours: 3.00

- ANSC 44000 - Horse Management
- ANSC 44100 - Beef Management
- ANSC 44200 - Sheep Management
- ANSC 44300 - Swine Management
- ANSC 44400 - Dairy Management
- ANSC 44500 - Commercial Poultry Management

- ANSC 44600 - Companion Animal Management

## Other Departmental /Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11400 - Introduction To Animal Sciences Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)  
Written Communication/Information Literacy Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity  
**Oral Communication Selective - Credit Hours: 3.00** (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication or
- COM 21700 - Science Writing And Presentation or
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills  
Economics Selective - Credit Hours: 3.00 (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selectives - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (4-5 credits)

- Electives - Credit Hours: 4.00-5.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.
- 2.0 GPA required in Animal Science courses.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency [website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11400 - Introduction To Animal Sciences Academic Programs
- ANSC 10200 - Introduction To Animal Agriculture
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11500 - General Chemistry ♦
- MA 16010 - Applied Calculus I

15 Credits

### Spring 1st Year

- ANSC 12100 - Ethics Of Animal Use
- ANSC 18100 - Orientation To Animal Sciences
- BIOL 11100 - Fundamentals Of Biology II ♦
- CHM 11600 - General Chemistry ♦
- VM 10200 - Careers In Veterinary Medicine
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity

15-16 Credits



## Fall 2nd Year

- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 24000 - Principles Of Animal Production
- BIOL 23100 - Biology III: Cell Structure And Function
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- COM 11400 - Fundamentals Of Speech Communication or
- COM 21700 - Science Writing And Presentation or
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills

16 Credits

## Spring 2nd Year

- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 25500 - Principles Of Animal Products
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- STAT 30100 - Elementary Statistical Methods
- Humanities/Social Science Selective - Credit Hours: 3.00

17 Credits

## Fall 3rd Year

- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- STAT 30100 - Elementary Statistical Methods
- PHYS 22000 - General Physics or
- PHYS 23300 - Physics For Life Sciences I
- Animal Science Restricted Selective - Credit Hours: 3.00
- Human Cultures Humanities Selective - Credit Hours: 3.00

17 Credits

## Spring 3rd Year

- ANSC 31100 - Animal Breeding And Genetics
- PHYS 22100 - General Physics or
- PHYS 23400 - Physics For Life Sciences II
- Animal Sciences Restricted Selective - Credit Hours: 3.00
- Economics Selective - Credit Hours: 3.00

14 Credits

## Fall 4th Year

- ANSC 48100 - Contemporary Issues In Animal Sciences (Capstone)
- BIOL 22100 - Introduction To Microbiology
- Animal Management Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

## 13 Credits

## Spring 4th Year

- Animal Sciences Restricted Selective - Credit Hours: 2.00
- Humanities or Social Science Selective (30000+ level): Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level): Credit Hours: 3.00
- Elective: Credit Hours: 2.00-3.00

## 12-13 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

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## Minor

# **Animal Science Minor**

## **Requirements for the Minor (18 credits)**

Complete one course in at least two areas.

### **A. Nutrition**

- ANSC 22100 - Principles Of Animal Nutrition

### **B. Physiology**

- ANSC 23000 - Physiology Of Domestic Animals
- BIOL 20300 - Human Anatomy And Physiology
- BIOL 20400 - Human Anatomy And Physiology

### **C. Genetics**

- ANSC 31100 - Animal Breeding And Genetics
- ANSC 51100 - Population Genetics
- ANSC 51400 - Animal Biotechnology
- BIOL 41500 - Introduction To Molecular Biology

### **D. Products**

- ANSC 30100 - Animal Growth, Development, And Evaluation
- ANSC 35100 - Meat Science

### **E. Electives**

- Remainder of 18 credits may be completed from other courses listed above, or from Animal Sciences (ANSC) courses that are numbered 30100 or higher.
- Not more than four total credits from ANSC 37000, ANSC 37100, ANSC 37200, ANSC 47000, ANSC 47100, and ANSC 47200 may be used.
- Only one of the physiology courses listed above may be used to satisfy the minor.

## **Notes**

- Departmental permission is not required to enroll in this minor.
- Students must achieve a minimum 2.00 grade point average in graded ANSC courses to meet minimum requirements for the Animal Sciences academic minor.

## **Disclaimer**

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Program Information**

### **Animal Sciences Supplemental Information**

#### **Behavior/Well Being Concentration**

##### **Behavior/Well Being Selective (12 credits)**

- ANTH 23500 - The Great Apes
- ANTH 33500 - Primate Behavior
- ANTH 53500 - Foundations Of Biological Anthropology
- ANTH 53600 - Primate Ecology
- BIOL 58705 - Animal Communication
- BIOL 59200 - The Evolution Of Behavior
- CPB 48000 - Seminar In Animal Welfare And Human-Animal Interaction-VN
- PHIL 27000 - Biomedical Ethics
- PHIL 28000 - Ethics And Animals
- PHIL 29000 - Environmental Ethics
- PSY 22200 - Introduction To Behavioral Neuroscience
- PSY 20000 - Introduction To Cognitive Psychology

#### **Biosciences Concentration**

##### **Science Selective (12 credits)**

- AGR 33300 - Data Science For Agriculture
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 50500 - Forage Management
- ANSC 30000-59999 (maximum of 6 credits allowed from this range)
- ASM 59100 - Special Topics
- BCHM 22100 - Analytical Biochemistry
- BCHM 32200-59900
- BME 50100 - Multivariate Analyses In Biostatistics
- BIOL 32200-59900
- CHM 29000 - Selected Topics In Chemistry For Lower-Division Students
- CHM 22400 - Introductory Quantitative Analysis
- CHM 32100-49000
- CNIT 22700 - Introduction To Bioinformatics
- CNIT 26700 - Introduction To C++ Language Programming
- CS 14500-59900
- ENTM 22820 - Forensic Analysis
- ENTM 24200 - Data Science

- ENTM 52500 - Medical And Veterinary Entomology
- FS 34100 - Food Processing I
- FS 36200 - Food Microbiology
- FS 44200 - Food Processing II
- HORT 53000 - Introduction To Computing For Biologists
- HSCI 56000 - Toxicology
- PHIL 42100 - Philosophy Of Science
- PHYS 17200 - Modern Mechanics
- IET 31600 - Statistical Quality Control
- PHYS 21800-25200
- PHYS 27200-49900
- STAT 50000-59999

## Animal Production and Industry Concentration

### Enterprise Management Selective (6 credits)

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 30500 - Agricultural Prices
- AGEC 31000 - Farm Organization
- AGEC 32100 - Principles Of Commodity Marketing
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 33100 - Principles Of Industrial Selling
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 41100 - Farm Management
- AGEC 41200 - Farm Business Management Workshop
- AGEC 42100 - Advanced Commodity Marketing
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 42500 - Estate Planning And Property Transfer
- AGEC 42700 - Advanced Agribusiness Marketing
- AGEC 43000 - Agricultural And Food Business Strategy
- AGEC 45500 - Agricultural Law
- MGMT 45500 - Legal Background For Business I

### Production Management Selective (3 credits)

- AGRY 25500 - Soil Science
- AGRY 36500 - Soil Fertility
- AGRY 37500 - Crop Production Systems
- AGRY 50500 - Forage Management
- ASM 20100 - Construction And Maintenance
- ASM 22200 - Crop Production Equipment
- ASM 24500 - Materials Handling And Processing
- ASM 33300 - Facilities Planning And Management
- ASM 42000 - Electric Power And Controls
- BTNY 30400 - Introductory Weed Science
- ENTM 20600 - General Entomology

- ENTM 20700 - General Entomology Laboratory
- ENTM 52500 - Medical And Veterinary Entomology
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership

## **Department of Biochemistry**

### **Overview**

The Department of Biochemistry is a vibrant research community with widespread, multidisciplinary collaborations. We offer both undergraduate and graduate programs with emphasis on research excellence in broad areas of science. The field of biochemistry has historically focused on molecular dissection of biological molecules and cellular pathways. Our current faculty build upon this classical approach, using cutting-edge approaches ranging from genome-wide transcriptional analyses, state-of-the-art mass spectroscopy, and x-ray crystallography in a variety of model systems including bacteria, fungi, plants and fruit flies. These approaches allow our researchers to link real world problems such as energy production and human disease prevention to defects in basic molecular processes, tackling the most pressing issues in society.

### **Faculty (website)**

### **Department of Biochemistry (website)**

## **Contact Information**

Department of Biochemistry  
Purdue University

Biochemistry Building  
175 South University Street  
West Lafayette, IN 47907-2063  
Phone: 765-494-1600

Email: [biochem-boilers@purdue.edu](mailto:biochem-boilers@purdue.edu)

The main office for the department is located in Room 120 of the BCHM Building.

## **Graduate Information**

For Graduate Information please see [Biochemistry Graduate Program Information](#) .

### **Baccalaureate**

### **Biochemistry, BS**

## About the Program

Biochemistry, the chemistry of living things, addresses the basic materials and processes of life itself. Biochemists investigate the chemical nature of such fundamental processes as the regulation of gene expression, the hormonal control of cell proliferation and differentiation. Knowledge of the molecular underpinnings of biological materials allows us to understand life processes and solve basic biological problems.

Students in the Department of Biochemistry, historically situated in the College of Agriculture, enjoy close mentoring by faculty through smaller class sizes and academic advising. Another strength of our program is that we strongly promote hands-on research and critical thinking skills. All students in the department participate in undergraduate research supervised by a faculty member.

There is also an opportunity to complete a five-year dual degree with biological engineering following acceptance into the College of Engineering.

How to apply to Biochemistry in the College of Agriculture

Biochemistry Website

Biochemistry Major Change (CODO) Requirements

## Degree Requirements

### 120 Credits Required

#### Departmental/Program Major Courses (49-50 credits)

#### Required Major Courses (28-29 credits)

- BCHM 10000 - Introduction To Biochemistry (satisfies Science, Technology & Society for core)
- BCHM 22100 - Analytical Biochemistry
- BCHM 29000 - Experimental Design Seminar
- BCHM 32200 - Analytical Biochemistry II
- BCHM 36100 - Molecules
- BCHM 39000 - Professional Development Seminar
- BCHM 46200 - Metabolism
- BCHM 46500 - Biochemistry Of Life Processes
- BCHM 49000 - Undergraduate Seminar
- BCHM 49800 - Research In Biochemistry - Credit Hours: 3.00 (Capstone)
- Bioinformatics Selective - Credit Hours: 2.00-3.00
- BCHM 42100 - R For Molecular Biosciences
- BCHM 61200 - Bioinformatic Analysis Of Genome Scale Data
- BIOL 47800 - Introduction To Bioinformatics
- BIOL 56310 - Protein Bioinformatics
- CHM 57900 - Computational Chemistry
- CS 47800 - Introduction to Bioinformatics
- HORT 53000 - Introduction To Computing For Biologists
- HORT 53100 - Applied Plant Genomics
- Advanced Biochemistry Selective - Credit Hours: 3.00-4.00 *note: the courses listed below cannot be used for any other requirements in the BCHM plan of study, i.e. no "double dipping."*

- BCHM 42200 - Computational Genomics
- BCHM 43400 - Medical Topics In Biochemistry
- BCHM 52100 - Comparative Genomics
- BCHM 53600 - Biological And Structural Aspects Of Drug Design And Action
- CHM 37200 - Physical Chemistry

## Biochemistry Selective Courses (24-25 credits)

- Humanities or Social Science Selective - Credit Hours: 9.00
- Science Selective - Credit Hours: 6.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (55-60 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11500 - Introduction To Biochemistry Academic Programs
- AGRY 32000 - Genetics or
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- AGRY 32100 - Genetics Laboratory or
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 11000 - Fundamentals Of Biology I or
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 11100 - Fundamentals Of Biology II or
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 23100 - Biology III: Cell Structure And Function ♦
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 11500 - General Chemistry ♦ (satisfies Science #1 for core) and
- CHM 11600 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 12901 - General Chemistry With A Biological Focus
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II ♦
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MA 16020 - Applied Calculus II
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- Economic Selective - Credit Hours: 3.00 (satisfies Human Culture: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00



## Electives (7-13 credits)

- Electives - Credit Hours: 7.00-13.00

## Supplemental List

[Click here for Biochemistry Supplemental Information](#)

## Grade Requirements

**Core major coursework** in biochemistry is defined as CHM 115/116/255/256, BIOL 231, BCHM 361/462. Biochemistry students must earn grades of C- or better in all of their core coursework to proceed in the major.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

[College of Agriculture Undergraduate Pass/No Pass Policy](#)

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

[College of Agriculture Undergraduate Pass/No Pass Policy](#)

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

## Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11500 - Introduction To Biochemistry Academic Programs
- BCHM 10000 - Introduction To Biochemistry
- BIOL 11000 - Fundamentals Of Biology I or
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- CHM 11500 - General Chemistry ♦
- MA 16010 - Applied Calculus I
- Humanities or Social Science Selective - Credit Hours: 3.00

## 17 Credits

## Spring 1st Year

- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- CHM 11600 - General Chemistry ♦
- MA 16020 - Applied Calculus II
- Written Communication Selective - Credit Hours: 3.00-4.00

## 14-15 Credits

## Fall 2nd Year

- BCHM 22100 - Analytical Biochemistry
- BIOL 23100 - Biology III: Cell Structure And Function ♦
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- STAT 30100 - Elementary Statistical Methods

## 15 Credits

## Spring 2nd Year

- AGRY 32000 - Genetics or
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- AGRY 32100 - Genetics Laboratory or
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BCHM 29000 - Experimental Design Seminar
- BCHM 36100 - Molecules
- CHM 25600 - Organic Chemistry For The Life Sciences II ♦
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

## Fall 3rd Year

- BCHM 32200 - Analytical Biochemistry II
- BCHM 39000 - Professional Development Seminar
- BCHM 46200 - Metabolism
- BCHM 49800 - Research In Biochemistry - Credit Hours: 1.00
- PHYS 22000 - General Physics
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 14 Credits

## Spring 3rd Year

- BCHM 49800 - Research In Biochemistry - Credit Hours: 1.00
- PHYS 22100 - General Physics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00-4.00

## 14-15 Credits

## Fall 4th Year

- BCHM 49800 - Research In Biochemistry - Credit Hours: 1.00
- Bioinformatics Selective - Credit Hours: 3.00
- Economics Selective - Credit Hours: 3.00
- Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

## Spring 4th Year

- BCHM 46500 - Biochemistry Of Life Processes
- Advanced Biochemistry Selective - Credit Hours: 3.00-4.00
- BCHM 49000 - Undergraduate Seminar
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00-4.00

## 12-14 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Biochemistry: Pre-Med Concentration, BS

### About the Program

Biochemistry, the chemistry of living things, addresses the basic materials and processes of life itself. Biochemists investigate the chemical nature of such fundamental processes as the regulation of gene expression, the hormonal control of cell proliferation and differentiation. Knowledge of the molecular underpinnings of biological materials allows us to understand life processes and solve basic biological problems.

Students in the Department of Biochemistry, historically situated in the College of Agriculture, enjoy close mentoring by faculty through smaller class sizes and academic advising. Another strength of our program is that we strongly promote hands-on research and critical thinking skills. All students in the department participate in undergraduate research supervised by a faculty member.

There is also an opportunity to complete a five-year dual degree with biological engineering following acceptance into the College of Engineering.

How to apply to Biochemistry in the College of Agriculture

Biochemistry Website

Biochemistry Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (51-53 credits)

### Required Major Courses (28-29 credits)

- BCHM 10000 - Introduction To Biochemistry (satisfies Science, Technology & Society for core)
- BCHM 22100 - Analytical Biochemistry
- BCHM 29000 - Experimental Design Seminar
- BCHM 32200 - Analytical Biochemistry II
- BCHM 36100 - Molecules
- BCHM 39000 - Professional Development Seminar
- BCHM 46200 - Metabolism
- BCHM 46500 - Biochemistry Of Life Processes
- BCHM 49000 - Undergraduate Seminar
- BCHM 49800 - Research In Biochemistry (Capstone) - Credit Hours: 3.00
- **Bioinformatics Selective** - Credit Hours: 3.00
- BCHM 42100 - R For Molecular Biosciences
- BCHM 61200 - Bioinformatic Analysis Of Genome Scale Data
- BIOL 47800 - Introduction To Bioinformatics
- BIOL 56310 - Protein Bioinformatics
- CHM 57900 - Computational Chemistry
- CS 47800 - Introduction to Bioinformatics
- HORT 53000 - Introduction To Computing For Biologists
- HORT 53100 - Applied Plant Genomics
- **Advanced Biochemistry Selective** - Credit Hours: 3.00-4.00 (*Note: the courses listed below cannot be used for any other requirements in the BCHM plan of study, i.e. no "double dipping"*)
- BCHM 42200 - Computational Genomics
- BCHM 43400 - Medical Topics In Biochemistry
- BCHM 52100 - Comparative Genomics
- BCHM 53600 - Biological And Structural Aspects Of Drug Design And Action
- CHM 37200 - Physical Chemistry

### Pre-Med Concentration Course and Selectives (26-27 credits)

- BIOL 20300 - Human Anatomy And Physiology
- BIOL 20400 - Human Anatomy And Physiology
- BIOL 39600 - Premedical Planning Seminar
- PSY 12000 - Elementary Psychology
- SOC 10000 - Introductory Sociology
- **Oral Communication Selective** - Credit Hours: 3.00 (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- Written Selective (20000+ level) - Credit Hours: 3.00 &nbsp;(see Oral & Written Selective list-only use a course for Pre-Med Concentration)
- SCLA 10200 - Transformative Texts, Critical Thinking And Communication II: Modern World
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Humanities or Social Science Selective - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (55-60 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11500 - Introduction To Biochemistry Academic Programs
- AGRY 32000 - Genetics or
- BIOL 24100 - Biology IV: Genetics And Molecular Biology or
- AGRY 32100 - Genetics Laboratory or
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 23100 - Biology III: Cell Structure And Function ♦
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 11500 - General Chemistry ♦ (satisfies Science #1 for core) and
- CHM 11600 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 12901 - General Chemistry With A Biological Focus
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II ♦
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MA 16020 - Applied Calculus II
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)  
Economic Selective - Credit Hours: 3.00 (satisfies Human Culture: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## Electives (4-6 credits)

- Electives - Credit Hours: 4.00-11.00

## Grade Requirements

**Core major coursework** in biochemistry is defined as CHM 115/116/255/256, BIOL 231, BCHM 361/462. Biochemistry students must earn grades of C- or better in all of their core coursework to proceed in the major.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

# College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

*College, department, major transfer credit (including any/all undistributed credit, TR graded course, AP/IB credit, etc.) should be clearly stated. Can transfer credit be applied to the major? If yes, how and where?*

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)



- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11500 - Introduction To Biochemistry Academic Programs
- BCHM 10000 - Introduction To Biochemistry
- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- CHM 11500 - General Chemistry ♦
- MA 16010 - Applied Calculus I

### 14 Credits

### Spring 1st Year

- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- CHM 11600 - General Chemistry ♦
- MA 16020 - Applied Calculus II
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

## 17-18 Credits

### Fall 2nd Year

- BCHM 22100 - Analytical Biochemistry
- BIOL 23100 - Biology III: Cell Structure And Function ♦
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- STAT 30100 - Elementary Statistical Methods

## 15 Credits

### Spring 2nd Year

- AGRY 32000 - Genetics or
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- AGRY 32100 - Genetics Laboratory or
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BCHM 29000 - Experimental Design Seminar
- BCHM 36100 - Molecules
- CHM 25600 - Organic Chemistry For The Life Sciences II ♦
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- **Oral Communication Selective** - Credit Hours: 3.00
- COM 11400 - Fundamentals Of Speech Communication or
- COM 21700 - Science Writing And Presentation or
- SCLA 10200 - Transformative Texts, Critical Thinking And Communication II: Modern World

## 16 Credits

### Fall 3rd Year

- BCHM 32200 - Analytical Biochemistry II
- BCHM 39000 - Professional Development Seminar
- BCHM 46200 - Metabolism
- BCHM 49800 - Research In Biochemistry - Credit Hours: 1.00
- PHYS 22000 - General Physics
- SOC 10000 - Introductory Sociology

## 14 Credits

### Spring 3rd Year

- BCHM 49800 - Research In Biochemistry - Credit Hours: 1.00
- BIOL 39600 - Premedical Planning Seminar
- PHYS 22100 - General Physics
- PSY 12000 - Elementary Psychology

- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00-7.00

## 14-18 Credits

### Fall 4th Year

- BCHM 49800 - Research In Biochemistry - Credit Hours: 1.00
- BIOL 20300 - Human Anatomy And Physiology
- Bioinformatics Selective - Credit Hours: 3.00
- Economics Selective - Credit Hours: 3.00
- Written Selective (20000+ level) - Credit Hours: 3.00

## 14 Credits

### Spring 4th Year

- BCHM 46500 - Biochemistry Of Life Processes
- BCHM 49000 - Undergraduate Seminar
- BIOL 20400 - Human Anatomy And Physiology
- Advanced Biochemistry Selective - Credit Hours: 3.00-4.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-4.00

## 14-18 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Biochemistry: Pre-Vet Concentration, BS

### About the Program

Biochemistry, the chemistry of living things, addresses the basic materials and processes of life itself. Biochemists investigate the chemical nature of such fundamental processes as the regulation of gene expression, the hormonal control of cell proliferation and differentiation. Knowledge of the molecular underpinnings of biological materials allows us to understand life processes and solve basic biological problems.

Students in the Department of Biochemistry, historically situated in the College of Agriculture, enjoy close mentoring by faculty through smaller class sizes and academic advising. Another strength of our program is that we strongly promote hands-on research and critical thinking skills. All students in the department participate in undergraduate research supervised by a faculty member.

There is also an opportunity to complete a five-year dual degree with biological engineering following acceptance into the College of Engineering.

[How to apply to Biochemistry in the College of Agriculture](#)

[Biochemistry Website](#)

[Biochemistry Major Change \(CODO\) Requirements](#)

### Degree Requirements

## 120 Credits Required

### Departmental/Program Major Courses (51-54 credits)

#### Required Major Courses (28-29 credits)

- BCHM 10000 - Introduction To Biochemistry (satisfies Science, Technology & Society for core)
- BCHM 22100 - Analytical Biochemistry
- BCHM 29000 - Experimental Design Seminar
- BCHM 32200 - Analytical Biochemistry II
- BCHM 36100 - Molecules
- BCHM 39000 - Professional Development Seminar
- BCHM 46200 - Metabolism
- BCHM 46500 - Biochemistry Of Life Processes
- BCHM 49000 - Undergraduate Seminar
- BCHM 49800 - Research In Biochemistry (Capstone) - Credit Hours: 3.00

**Bioinformatics Selective** - Credit Hours: 3.00

- BCHM 42100 - R For Molecular Biosciences
- BCHM 61200 - Bioinformatic Analysis Of Genome Scale Data
- BIOL 47800 - Introduction To Bioinformatics
- BIOL 56310 - Protein Bioinformatics
- CHM 57900 - Computational Chemistry
- CS 47800 - Introduction to Bioinformatics
- HORT 53000 - Introduction To Computing For Biologists
- HORT 53100 - Applied Plant Genomics

**Advanced Biochemistry Selective** - Credit Hours: 3.00-4.00 *The courses listed below cannot be used for any other requirements in the BCHM plan of study, i.e. no "double dipping."*

- BCHM 42200 - Computational Genomics
- BCHM 43400 - Medical Topics In Biochemistry
- BCHM 52100 - Comparative Genomics
- BCHM 53600 - Biological And Structural Aspects Of Drug Design And Action
- CHM 37200 - Physical Chemistry

## Pre-Vet Concentration Required Courses and Selectives (26-28 credits)

- VM 10200 - Careers In Veterinary Medicine
- BIOL 22100 - Introduction To Microbiology
- ANSC 22100 - Principles Of Animal Nutrition or
- ANSC 23000 - Physiology Of Domestic Animals
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition
- HONR 19903 - Interdisciplinary Approaches In Writing
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity
- Humanities or Social Science Selective - Credit Hours: 9.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (55-60 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11500 - Introduction To Biochemistry Academic Programs
- AGRY 32000 - Genetics or
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- AGRY 32100 - Genetics Laboratory or
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- BIOL 23100 - Biology III: Cell Structure And Function ♦
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- CHM 11500 - General Chemistry ♦ (satisfies Science #1 for core) and

- CHM 11600 - General Chemistry ♦ (satisfies Science #2 for core) or
- CHM 12901 - General Chemistry With A Biological Focus
- CHM 25500 - Organic Chemistry For The Life Sciences I ♦
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II ♦
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MA 16020 - Applied Calculus II
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- Economics Selective - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## Electives (3-11 credits)

- Electives - Credit Hours: 3.00-11.00

## Grade Requirements

**Core major coursework** in biochemistry is defined as CHM 115/116/255/256, BIOL 231, BCHM 361/462. Biochemistry students must earn grades of C- or better in all of their core coursework to proceed in the major.

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

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Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11500 - Introduction To Biochemistry Academic Programs
- BCHM 10000 - Introduction To Biochemistry
- BIOL 11000 - Fundamentals Of Biology I ♦ or
- BIOL 12100 - Biology I: Diversity, Ecology, And Behavior
- CHM 11500 - General Chemistry ♦
- MA 16010 - Applied Calculus I

### 14 Credits

### Spring 1st Year

- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BIOL 13100 - Biology II: Development, Structure, And Function Of Organisms
- CHM 11600 - General Chemistry ♦
- MA 16020 - Applied Calculus II
- VM 10200 - Careers In Veterinary Medicine
- **Written Communication Selective** - Credit Hours: 3.00-4.00
- ENGL 10600 - First-Year Composition or
- ENGL 10800 - Accelerated First-Year Composition or
- HONR 19903 - Interdisciplinary Approaches In Writing or
- SCLA 10100 - Transformative Texts, Critical Thinking And Communication I: Antiquity To Modernity

### 15-16 Credits

### Fall 2nd Year

- BCHM 22100 - Analytical Biochemistry
- BIOL 23100 - Biology III: Cell Structure And Function ♦
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function



- CHM 25500 - Organic Chemistry For The Life Sciences I ♦
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- STAT 30100 - Elementary Statistical Methods

## 15 Credits

### Spring 2nd Year

- AGRY 32000 - Genetics or
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- AGRY 32100 - Genetics Laboratory or
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BCHM 29000 - Experimental Design Seminar
- BCHM 36100 - Molecules
- CHM 25600 - Organic Chemistry For The Life Sciences II ♦
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II  
**Oral Communication Selective** - Credit Hours: 3.00
- COM 11400 - Fundamentals Of Speech Communication or
- COM 21700 - Science Writing And Presentation or
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills

## 16 Credits

### Fall 3rd Year

- BCHM 32200 - Analytical Biochemistry II
- BCHM 39000 - Professional Development Seminar
- BCHM 46200 - Metabolism
- BCHM 49800 - Research In Biochemistry - Credit Hours: 1.00
- PHYS 22000 - General Physics
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 16-17 Credits

### Spring 3rd Year

- BCHM 49800 - Research In Biochemistry - Credit Hours: 1.00
- PHYS 22100 - General Physics
- ANSC 22100 - Principles Of Animal Nutrition or
- ANSC 23000 - Physiology Of Domestic Animals
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 14-15 Credits

### Fall 4th Year

- BCHM 49800 - Research In Biochemistry - Credit Hours: 1.00
- BIOL 22100 - Introduction To Microbiology  
  - **Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Bioinformatics Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-4.00

## 14-18 Credits

### Spring 4th Year

- BCHM 46500 - Biochemistry Of Life Processes
- BCHM 49000 - Undergraduate Seminar
- Advanced Biochemistry Selective - Credit Hours: 3.00-4.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-4.00

## 13-17 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Minor

### Biochemistry Minor

#### Requirements for the Minor (18-19 credits)

##### Required Courses (11-12 credits)

- BCHM 10000 - Introduction To Biochemistry or
- Science, Technology, and Society (STS) Selective - Credit Hours: 3.00
- CHM 25600 - Organic Chemistry For The Life Sciences II or
- CHM 26200 - Organic Chemistry II or
- CHM 26605 - Organic Chemistry II or
- MCMP 20500 - Organic Chemistry II
- BCHM 36100 - Molecules or
- BCHM 56100 - General Biochemistry I
- BCHM 46200 - Metabolism or
- BCHM 56200 - General Biochemistry II

##### Selective Courses (7 credits)

- BCHM 29000 - Experimental Design Seminar
- BCHM 32200 - Analytical Biochemistry II
- BCHM 46500 - Biochemistry Of Life Processes
- BCHM 49000 - Undergraduate Seminar
- BCHM 49800 - Research In Biochemistry (only 3 credits can be used in the minor)
- BCHM 22100 - Analytical Biochemistry or
- CHM 32100 - Analytical Chemistry I
- Other BCHM course (40000-level or higher)

## Notes

- Departmental permission is not required for this minor.
- Departmental permission is required to register for the following courses: BCHM 29000, BCHM 36100, BCHM 46200, BCHM 46300, BCHM 46500, BCHM 49000 and BCHM 49800
- All courses for the minor must be taken for a grade (pass/not-pass courses not allowed)

## Disclaimer

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## **Bioinformatics Minor**

The goal of the Bioinformatics minor is to increase career opportunities for our graduates and also to meet a critical need of Indiana's stakeholders. Analysis of ongoing trends in scientific publications indicates that bioinformatics is nearly as important as biochemistry as a discipline and has led to a call for inclusion of bioinformatics courses in standard curriculums related to biology (Journal of Microbiology and Biology Education, December 2015, p198-202).

In recognition of the importance and transformative potential of data-driven fields such as bioinformatics, Purdue recently created the Integrative Data Science Initiative to promote data science-enabled research and education.

### **Requirements for the Minor (15-16 credits)**

#### **Required Courses (12-13 credits)**

- BCHM 42100 - R For Molecular Biosciences
- BCHM 42200 - Computational Genomics
- BCHM 52100 - Comparative Genomics
- CS 17700 - Programming With Multimedia Objects or
- CS 15900 - C Programming or
- CS 18000 - Problem Solving And Object-Oriented Programming

#### **Bioinformatics Elective - Choose One: (3 credits)**

- BCHM 61200 - Bioinformatic Analysis Of Genome Scale Data
- BIOL 47800 - Introduction To Bioinformatics
- BIOL 56310 - Protein Bioinformatics
- CHM 57900 - Computational Chemistry
- CS 47800 - Introduction to Bioinformatics
- HORT 53000 - Introduction To Computing For Biologists
- HORT 53100 - Applied Plant Genomics

## **Notes**

Pre-requisites - There are pre-req courses that need to be taken. For current pre-requisites for courses, [click here](#).

## **Disclaimer**

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The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Program Information

### Biochemistry Supplemental Information

#### Science Selective (6 Credits)

- BCHM 40000-59999 (Courses may be used if not part of the required plan of study)
- BCHM 60000:69999
- BIOL 20000:20400, 28600:29400, 30100:49700, 49900:69900
- CHM 22400:24100, 28600:29400, 32100:32800, 42400:47500, 53600:69999
- CS 20000:59999
- EAPS 22000:59900
- MA 25000:59999
- MCMP 20600:59999
- STAT 41600:47900, 51200:59900
- ABE 20100 - Thermodynamics In Biological Systems I
- ABE 20200 - Thermodynamics In Biological Systems II
- ABE 20500 - Computations For Engineering Systems
- ABE 21000 - Thermodynamics Principles Of Engineering And Biological Systems
- ABE 22600 - Biotechnology Laboratory I
- ABE 22700 - Biotechnology Laboratory II
- ABE 30100 - Numerical And Computational Modeling In Biological Engineering
- ABE 30300 - Applications Of Physical Chemistry To Biological Processes
- ABE 30500 - Physical Properties Of Biological Materials
- ABE 32000 - Solid Modeling, Simulation, And Analysis
- ABE 32500 - Soil And Water Resource Engineering
- ABE 33000 - Design Of Machine Components
- ABE 33600 - All Terrain Vehicle Design
- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- ABE 51100 - Drug Development
- ABE 51200 - Good Regulatory Practices
- ABE 52200 - Ecohydrology
- ABE 53100 - Instrumentation And Data Acquisition
- ABE 56000 - Biosensors: Fundamentals And Applications
- AGRY 12500 - Environmental Science And Conservation
- AGRY 25500 - Soil Science
- AGRY 27000 - Forest Soils
- AGRY 33700 - Environmental Hydrology
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 34900 - Soil Ecology
- AGRY 43100 - Atmospheric Thermodynamics
- AGRY 43200 - Atmospheric Dynamics I
- AGRY 43300 - Atmospheric Dynamics II
- AGRY 44100 - Synoptic Laboratory I
- AGRY 44200 - Synoptic Laboratory II
- AGRY 44300 - Synoptic Laboratory III
- AGRY 46500 - Soil Physical Properties

- AGRY 48000 - Plant Genetics
- AGRY 51100 - Population Genetics
- AGRY 51500 - Plant Mineral Nutrition
- AGRY 52000 - Principles And Methods Of Plant Breeding
- AGRY 52500 - Crop Physiology And Ecology
- AGRY 53000 - Advanced Plant Genetics
- AGRY 53500 - Boundary Layer Meteorology
- AGRY 53600 - Environmental Biophysics
- AGRY 54000 - Soil Chemistry
- AGRY 54400 - Environmental Organic Chemistry
- AGRY 55500 - Soil And Plant Analysis
- AGRY 56000 - Soil Physics
- AGRY 58000 - Soil Microbiology
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- ANSC 29500 - Special Topics In Animal Sciences
- ANSC 33300 - Physiology Of Reproduction
- ANSC 35100 - Meat Science
- ANSC 51100 - Population Genetics
- ANSC 51400 - Animal Biotechnology
- ANSC 52400 - Ruminant Nutrition And Physiology
- ANSC 52200 - Monogastric Nutrition
- ANSC 53500 - Avian Physiology
- ANSC 55500 - Animal Growth And Development
- BCHM 10100 - Introduction To Biochemistry Laboratory
- BCHM 27500 - Honors Course - Lower Division
- BCHM 29801 - Head Start To Introductory Biochemistry Research
- BCHM 49500 - Special Assignments
- BCHM 49800 - Research In Biochemistry
- BCHM 49801 - Head Start To Biochemistry Research
- BCHM 53600 - Biological And Structural Aspects Of Drug Design And Action
- BIOL 22100 - Introduction To Microbiology
- BIOL 49700 - Biology Honors Seminar
- BTNY 20700 - The Microbial World
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30200 - Plant Ecology
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 42000 - Plant Cellular And Developmental Biology
- BTNY 50400 - Advanced Weed Science
- BTNY 50500 - Advanced Biology Of Weeds
- BTNY 55000 - Biology Of Fungi
- BTNY 55200 - Molecular Approaches In Plant Biology
- BTNY 55300 - Plant Growth And Development
- BTNY 55800 - Pathogens Of Plants
- CHM 32100 - Analytical Chemistry I
- CHM 32300 - Analytical Chemistry I Honors
- CHM 34800 - Bioinorganic Chemistry
- CHM 48100 - Environmental Chemistry
- CNIT 22700 - Introduction To Bioinformatics
- EAPS 12500 - Environmental Science And Conservation
- ENTM 20600 - General Entomology

- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior
- ENTM 22810 - Forensic Investigation
- ENTM 22820 - Forensic Analysis
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 31100 - Insect Ecology
- FNR 12500 - Environmental Science And Conservation
- FNR 20100 - Marine Biology
- FNR 22500 - Dendrology
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- FNR 30500 - Conservation Genetics
- FNR 33100 - Forest Ecosystems
- FNR 35100 - Aquatic Sampling Techniques
- FNR 35300 - Natural Resources Measurement
- FNR 43400 - Tree Physiology
- FNR 44700 - Vertebrate Population Dynamics
- FNR 45300 - Fish Physiology
- FNR 45800 - Advanced Marine Biology
- FNR 45500 - Fish Ecology
- FNR 54300 - Conservation Biology I
- FS 36200 - Food Microbiology
- FS 36300 - Food Microbiology Laboratory
- FS 45300 - Food Chemistry
- FS 46700 - Food Analysis
- FS 46900 - Food Analysis Laboratory
- FS 56500 - Microbial Foodborne Pathogens
- FS 56600 - Microbial Techniques For Food Pathogens
- FS 59100 - Special Topics
- HORT 30100 - Plant Physiology
- HORT 55100 - Plant Responses To The Environment
- HORT 55300 - Plant Growth And Development
- NRES 12500 - Environmental Science And Conservation
- NRES 23000 - Survey Of Meteorology
- NRES 25500 - Soil Science
- NRES 38500 - Environmental Soil Chemistry
- NUTR 30300 - Essentials Of Nutrition
- NUTR 31500 - Fundamentals Of Nutrition
- NUTR 43700 - Macronutrient Metabolism In Human Health And Disease
- NUTR 43800 - Micronutrient And Phytochemical Metabolism In Human Health And Disease
- NUTR 45300 - Food Chemistry
- TLI 52100 - Drug Development
- STAT 22500 - Introduction To Probability Models
- STAT 25000 - Problems Solving In Probability
- STAT 31100 - Introductory Probability

## **Department of Botany and Plant Pathology**

## **Overview**

Welcome to the Department of Botany and Plant Pathology at Purdue University.

Plants are key to all life on earth and are critical for global carbon cycles and ecosystem function. Plants also provide us with food, medicines, and many other products. The Purdue Department of Botany and Plant Pathology has been at the forefront of plant science research, teaching, and community engagement since 1887. Our department includes 35 faculty who are advancing and teaching the disciplines of plant biology, plant pathology, and weed science.

With a degree in Plant Science from Purdue's Botany and Plant Pathology department, you will gain fundamental knowledge about plant evolution and diversity, structure, function, ecology, and development. Career opportunities include environmental and conservation biology, teaching in schools and colleges, research and teaching in academia, industry research and development, managing botanic gardens, and stewardship of our natural world through private and governmental programs.

## **Faculty (website)**

## **Department of Botany and Plant Pathology (website)**

## **Contact Information**

Department of Botany and Plant Pathology  
Purdue University  
Lilly Hall of Life Sciences  
915 West State Street  
West Lafayette, IN 47907-2054  
Phone: 765.494.0352  
E-mail: [botany@purdue.edu](mailto:botany@purdue.edu)

The main office for the department is located in Room 1-446 of LILY Hall.

## **Graduate Information**

For Graduate Information please see [Botany and Plant Pathology Graduate Program Information](#) .

## **Baccalaureate**

## **Plant Science, BS**

## **About the Program**

This major is designed for students who are interested in the biology of plants: how they grow, develop and evolve; the interactions of plants with other organisms and their role in the environment; how to manage plants that are grown for



food, fiber and fuel. Our major allows students to develop expertise in these areas, prepare for a career in fields such as biotechnology and environmental management, and move forward to advanced graduate studies.

Plant Science Website

Plant Science Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (28 credits)

### Required Major Courses (28 credits)

- BTNY 12000 - Principles Of Plant Biology I
- BTNY 12100 - Principles Of Plant Biology II
- BTNY 20700 - The Microbial World
- BTNY 20800 - Introduction To Plant Science Research
- BTNY 26200 - Plant Structure And Tissue Biology
- BTNY 30200 - Plant Ecology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 42000 - Plant Cellular And Developmental Biology
- BTNY 49700 - Undergraduate Seminar (Capstone)
- BTNY 49800 - Research In Plant Science (Capstone) - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (78.5-79.5 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12500 - Introduction To Plant Science
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- BCHM 30700 - Biochemistry
- CHM 11100 - General Chemistry (satisfies Science #1 for core)
- CHM 11200 - General Chemistry (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- HORT 30100 - Plant Physiology
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- PHYS 22000 - General Physics
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core) or
- STAT 50300 - Statistical Methods For Biology
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or

- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Plant Science Focus Selective - Credit Hours: 15.00 (see Plant Science Supplemental Information)
- Plant Science Focus Selective (30000+ level) - Credit Hours: 3.00
- Human Culture: Humanities Selective - Credit Hours: 3.00 (satisfies Human Culture: Humanities for core)
- Science, Technology, & Society Selective - Credit Hours: 3.00 (satisfies Science, Technology, & Society for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (12.5-13.5 credits)

- Elective - Credit Hours: 12.50-13.50

## Supplemental List

For Plant Science Focus Selective list - See Plant Science Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency [website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.

- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12500 - Introduction To Plant Science
- BTNY 12000 - Principles Of Plant Biology I
- CHM 11100 - General Chemistry
- MA 16010 - Applied Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14.5-15.5 Credits

### Spring 1st Year

- BTNY 12100 - Principles Of Plant Biology II
- BTNY 20700 - The Microbial World
- BTNY 20800 - Introduction To Plant Science Research
- CHM 11200 - General Chemistry
- Oral Communication Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.50

### 15.5 Credits

### Fall 2nd Year

- BTNY 26200 - Plant Structure And Tissue Biology
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory
- Focus Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

### 14 Credits

### Spring 2nd Year

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- BTNY 30200 - Plant Ecology
- Science, Technology, & Society Selective - Credit Hours: 3.00
- Focus Selective - Credit Hours: 3.00
- Economics Selective - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or

- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics

## 16 Credits

### Fall 3rd Year

- BCHM 30700 - Biochemistry
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 49800 - Research In Plant Science (Capstone) - Credit Hours: 3.00
- PHYS 22000 - General Physics
- Focus Selective - Credit Hours: 3.00

## 16 Credits

### Spring 3rd Year

- BTNY 42000 - Plant Cellular And Developmental Biology
- HORT 30100 - Plant Physiology
- STAT 30100 - Elementary Statistical Methods
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

### Fall 4th Year

- BTNY 49700 - Undergraduate Seminar (Capstone)
- Focus Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Electives - Credit Hours: 5.00-6.00

## 12-13 Credits

### Spring 4th Year

- Focus Selective - Credit Hours: 3.00
- Focus Selective (30000+ level) - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Electives - Credit Hours: 3.00

## 15 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Disclaimer

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## Minor

### Plant Biology Minor

#### Requirements for the Minor (15 credits)

##### Required Courses (4 credits)

- BTNY 11000 - Introduction To Plant Science

##### Selective Courses (11 credits)

- BTNY 20700 - The Microbial World
- BTNY 28500 - Plants And Civilization
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30200 - Plant Ecology
- BTNY 30400 - Introductory Weed Science

- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 42000 - Plant Cellular And Developmental Biology
- BTNY 49800 - Research In Plant Science \*
- BTNY 55000 - Biology Of Fungi
- HORT 30100 - Plant Physiology

## Notes

- Departmental permission is not required to enroll in this minor.
- \*A maximum of three credits of BTNY 49800 or comparable research in the plant sciences may be applied to the minor.
- Students in the Plant Science major cannot minor in Plant Biology.

## Disclaimer

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Consultation with an advisor may result in an altered plan customized for an individual student.

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## Plant Pathology Minor

### Requirements for the Minor (15 credits)

#### Required Courses (9 credits)

- BTNY 30100 - Introductory Plant Pathology
- BTNY 52500 - Intermediate Plant Pathology
- BTNY 53500 - Plant Disease Epidemiology

#### Selective Courses (6 credits)

- BTNY 20700 - The Microbial World
- BTNY 49800 - Research In Plant Science \*
- BTNY 55000 - Biology Of Fungi

## Notes

- Departmental permission is not required to enroll in this minor.
- \* A maximum of three credits of BTNY 49800 or comparable research in the plant sciences may be applied to the minor.

## Disclaimer

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## **Weed Science Minor**

### **Requirements for the Minor (15 credits)**

#### **A. Required Courses (6 credits)**

- BTNY 30400 - Introductory Weed Science
- BTNY 50400 - Advanced Weed Science or
- BTNY 50500 - Advanced Biology Of Weeds

#### **B. Selectives (9 credits)**

- BTNY 30200 - Plant Ecology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 49800 - Research In Plant Science \*
- HORT 30100 - Plant Physiology

### **Notes**

- Department permission is not required to enroll in this minor.
- \*A maximum of three credits of BTNY 49800 or comparable research in the plant sciences may be applied to the minor.

### **Disclaimer**

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## **Program Information**

### **Plant Science Supplemental Information**

#### **Focus Selective (18 credits)**

*At least 3 credits must be 30000+ level*

- AGEC 25000 - Economic Geography Of World Food And Resources
- AGRY 25500 - Soil Science



- AGRY 27000 - Forest Soils
- AGRY 28500 - World Crop Adaptation And Distribution
- ASM 23600 - Environmental Systems Management
- BCHM 22100 - Analytical Biochemistry
- BIOL 22100 - Introduction To Microbiology
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BTNY 28500 - Plants And Civilization
- BTNY 29800 - Research In Plant Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- FNR 21000 - Natural Resource Information Management
- FNR 22500 - Dendrology
- HORT 20100 - Plant Propagation
- NRES 25500 - Soil Science

**30000+ level (At least 3 credits must be taken)**

- ABE 32500 - Soil And Water Resource Engineering
- AGEC 34000 - International Economic Development
- AGEC 41000 - Agricultural Policy
- AGRY 33500 - Weather And Climate
- AGRY 34900 - Soil Ecology
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 45000 - Soil Conservation and Water Management
- AGRY 48000 - Plant Genetics
- AGRY 51100 - Population Genetics
- AGRY 51800 - Plant Physiology And Biotechnology Research Techniques
- AGRY 52000 - Principles And Methods Of Plant Breeding
- AGRY 52500 - Crop Physiology And Ecology
- AGRY 53000 - Advanced Plant Genetics
- AGRY 53600 - Environmental Biophysics
- AGRY 54400 - Environmental Organic Chemistry
- AGRY 54500 - Remote Sensing Of Land Resources
- AGRY 58000 - Soil Microbiology
- BIOL 41500 - Introduction To Molecular Biology
- BIOL 41600 - Viruses And Viral Disease
- BIOL 42000 - Eukaryotic Cell Biology
- BIOL 43800 - General Microbiology
- BIOL 48100 - Eukaryotic Genetics
- BIOL 51700 - Molecular Biology: Proteins
- BIOL 55001 - Eukaryotic Molecular Biology
- BIOL 58000 - Evolution
- BIOL 58210 - Ecological Statistics
- BIOL 59500 - Special Assignments
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 39000 - Selected Topics In Plant Science
- BTNY 49800 - Research In Plant Science
- BTNY 50400 - Advanced Weed Science
- BTNY 50500 - Advanced Biology Of Weeds
- BTNY 52500 - Intermediate Plant Pathology

- BTNY 53500 - Plant Disease Epidemiology
- BTNY 55000 - Biology Of Fungi
- BTNY 55200 - Molecular Approaches In Plant Biology
- BTNY 55300 - Plant Growth And Development
- BTNY 55800 - Pathogens Of Plants
- BTNY 56200 - Plant Hormone Biology
- BTNY 59000 - Special Problems
- BTNY 61300 - Advanced Plant Pathology
- ENTM 31100 - Insect Ecology
- ENTM 41000 - Applied Insect Biology
- FNR 30500 - Conservation Genetics
- FNR 33100 - Forest Ecosystems
- FNR 35700 - Fundamental Remote Sensing
- FNR 43400 - Tree Physiology
- FNR 55800 - Remote Sensing Analysis And Applications
- FNR 59800 - Topical Problems In Forestry And Natural Resources
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 55100 - Plant Responses To The Environment
- SFS 30100 - Agroecology
- STAT 51100 - Statistical Methods

## Department of Entomology

### Overview

#### Vision

To be a leader recognized worldwide for the solutions and discoveries generated through the application of science focused on insect biology.

#### Mission

Our mission is to prepare students to address Societal Grand Challenges through the development and application of arthropod/ nematode science.

#### Core Values

- Encourage the highest standards of ethics and citizenship
- Operate in an open, objective, and inclusive environment
- A community of scholars committed to excellence and teamwork
- Promote the synergism that comes from interdisciplinary interactions
- Value our human capital
- Embrace and promote increased diversity
- Adopt emerging information and other technologies as tools - not final solutions
- Resolve to actively disseminate our knowledge to people of all ages

### Faculty (website)

## **Department of Entomology (website)**

### **Contact Information**

Department of Entomology  
Purdue University - Smith Hall  
901 West State Street  
West Lafayette, IN 47907  
Phone: (765) 494-4554  
Email: [insectbiology@purdue.edu](mailto:insectbiology@purdue.edu)

The main office for the department is located in Room 127 of SMTH Hall.

### **Graduate Information**

For Graduate Information please see [Entomology Graduate Program Information](#) .

### **Baccalaureate**

#### **Insect Biology, BS**

##### About the Program

Insect Biology Majors study insects and related organisms. The program emphasizes "hands on learning" with opportunities for faculty mentored undergraduate research, field and laboratory experiences and study abroad options. Insect biologists apply knowledge and modern technology to address grand challenges including protection of human and animal health, food, and property, and natural environments. Insect biologists work as scientists, educators, technicians, consultants, and specialists in urban, agricultural, and natural environments to prevent the spread of disease, feed the world, promote biodiversity, protect the environment, solve crimes, strengthen biosecurity, and teach science. Careers are as diverse as the insects we study.

[Entomology Website](#)

[Insect Biology Major Change \(CODO\) Requirements](#)

##### Degree Requirements

### **120 Credits Required**

Departmental/Program Major Courses (46 credits)

Required Major Courses (43 credits)

- ENTM 10100 - Insect Biology And Societal Grand Challenges
- ENTM 10200 - The Practice Of Science
- ENTM 20100 - Scientific And Technical Communication
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 30100 - Experimentation And Analysis
- ENTM 31100 - Insect Ecology
- ENTM 31200 - Plant-Insect Chemical Ecology
- ENTM 33500 - Introduction To Insect Identification
- ENTM 35300 - Insecticides And Environment
- ENTM 39300 - Insect Biology Practicum - must take 2 times
- ENTM 40100 - Addressing Grand Challenges Through Insect Biology
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- ENTM 41002 - Insects Of Agricultural Crops
- ENTM 49310 - Insect Biology Capstone Experience - must take 2 times
- ENTM 49390 - Insect Biology Capstone Forum

### Directed Science Selective (3 credits)

- AGRY 10000-59999
- ANSC 10000-59999
- ANTH 10000-59999
- BCHM 10000-59999
- BIOL 10000-59999
- BTNY 10000-59999
- CHM 10000-59999
- EAPS 10000-59999
- ENTM 10000-59999
- FNR 10000-59999
- HORT 10000-59999
- NRES 10000-59999
- PHYS 10000-59999

### Other Departmental /Program Course Requirements (56-61 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11700 - Introduction To Entomology Academic Programs
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦
- BTNY 35000 - Biotechnology In Agriculture
- CHM 11100 - General Chemistry or
- CHM 11500 - General Chemistry
- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry
- PHYS 21400 - The Nature Of Physics

- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)  
**Calculus Selective** - Credit Hours: 3.00-5.00 (satisfies Quantitative Reasoning for core)
- MA 16010 - Applied Calculus I
- MA 16020 - Applied Calculus II
- MA 16100 - Plane Analytic Geometry And Calculus I
- MA 16500 - Analytic Geometry And Calculus I  
**Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Science, Technology, & Society Selective - Credit Hours: 3.00 (satisfies Science, Technology, & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## Electives (16-19 credits)

- Electives - Credit Hours: 13.00-18.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

*College, department, major transfer credit (including any/all undistributed credit, TR graded course, AP/IB credit, etc.) should be clearly stated. Can transfer credit be applied to the major? If yes, how and where?*

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11700 - Introduction To Entomology Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11100 - General Chemistry or
- CHM 11500 - General Chemistry ♦
- ENTM 10100 - Insect Biology And Societal Grand Challenges
- ENTM 10200 - The Practice Of Science  
**Calculus Selective** - Credit Hours: 3.00-5.00
- MA 16010 - Applied Calculus I or
- MA 16020 - Applied Calculus II or
- MA 16100 - Plane Analytic Geometry And Calculus I or
- MA 16500 - Analytic Geometry And Calculus I

### 12-15 Credits

### Spring 1st Year

- BIOL 11100 - Fundamentals Of Biology II ♦
- CHM 11200 - General Chemistry or
- CHM 11600 - General Chemistry ♦
- ENTM 21000 - Introduction To Insect Behavior
- Written Communication Selective - Credit Hours: 3.00-4.00  
**Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics

### 15-18 Credits

### Fall 2nd Year

- ENTM 20100 - Scientific And Technical Communication
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- PHYS 21400 - The Nature Of Physics

- STAT 30100 - Elementary Statistical Methods ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 15 Credits

### Spring 2nd Year

- ENTM 31100 - Insect Ecology
- ENTM 25300 - Insect Physiology And Biochemistry
- Humanities or Social Science Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

### Fall 3rd Year

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- ENTM 30100 - Experimentation And Analysis
- ENTM 33500 - Introduction To Insect Identification
- ENTM 39300 - Insect Biology Practicum
- Science, Technology, & Society Selective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- BTNY 35000 - Biotechnology In Agriculture
- ENTM 31200 - Plant-Insect Chemical Ecology
- ENTM 35300 - Insecticides And Environment
- ENTM 39300 - Insect Biology Practicum
- Directed Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

### Fall 4th Year

- ENTM 41000 - Applied Insect Biology
- ENTM 49310 - Insect Biology Capstone Experience - Credit Hours: 2.00
- ENTM 41001 - Insects Of Urban Landscapes or
- ENTM 41002 - Insects Of Agricultural Crops
- Electives - Credit Hours: 5.00-9.00

## 10-14 Credits



## Spring 4th Year

- ENTM 40100 - Addressing Grand Challenges Through Insect Biology
- ENTM 49310 - Insect Biology Capstone Experience - Credit Hours: 2.00
- ENTM 49390 - Insect Biology Capstone Forum
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 12-13 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

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## Minor

### Forensic Sciences Minor

#### Requirements for the Minor (20 credits)

## Required Courses (11 credits)

- ENTM 22810 - Forensic Investigation
- ENTM 22820 - Forensic Analysis
- ENTM 22830 - Forensic Testimony And Ethics

## Selective Courses (9 credits)

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 34900 - Soil Ecology
- AGRY 35500 - Soil Morphology And Geography
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 58000 - Soil Microbiology
- ANTH 31000 - Mortuary Practices Across Cultures
- ANTH 33600 - Human Variation
- ANTH 40500 - Ethnographic Methods
- ANTH 42500 - Archaeological Method And Theory
- ANTH 42800 - Field Methods In Archaeology
- ANTH 43600 - Human Evolution
- ANTH 53400 - Human Osteology
- ANTH 53500 - Foundations Of Biological Anthropology
- ANTH 58900 - Archaeology And Materials Science
- ANTH 59200 - Selected Topics In Anthropology
- BCHM 22100 - Analytical Biochemistry
- BCHM 32200 - Analytical Biochemistry II
- BCHM 56200 - General Biochemistry II
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 41500 - Introduction To Molecular Biology
- BIOL 43800 - General Microbiology
- BIOL 43900 - Laboratory In General Microbiology
- BIOL 44400 - Human Genetics
- BIOL 47800 - Introduction To Bioinformatics
- BIOL 53300 - Medical Microbiology
- BIOL 58000 - Evolution
- CNIT 42000 - Basic Cyber Forensics
- CNIT 45500 - Network Security
- CNIT 45600 - Wireless Security And Management
- CNIT 51100 - Foundations In Homeland Security Studies
- CNIT 51200 - Managing Resources And Applications For Homeland Security
- CNIT 55700 - Advanced Research Topics In Cyber Forensics
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior
- ENTM 22840 - Forensic Entomology Principles

- ENTM 22841 - Forensic Entomology Principles Lab
- ENTM 32810 - Practical Molecular Biology
- ENTM 33500 - Introduction To Insect Identification
- ENTM 52500 - Medical And Veterinary Entomology
- FNR 22500 - Dendrology
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 32820 - Medico-Legal Entomology
- ENTM 42820 - Carrion Ecology
- FNR 21000 - Natural Resource Information Management
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- FNR 30500 - Conservation Genetics
- FNR 34100 - Wildlife Habitat Management
- FNR 34800 - Wildlife Investigational Techniques
- HSCI 33300 - Introduction To Immunology
- HSCI 56000 - Toxicology
- MGMT 53200 - Forensic Accounting And Fraud Examination
- POL 42500 - Environmental Law And Politics
- POL 42800 - The Politics Of Regulation
- PSY 33500 - Stereotyping And Prejudice
- PSY 35000 - Abnormal Psychology
- PSY 42800 - Drugs And Behavior
- PSY 44300 - Aggression And Violence
- SOC 32400 - Criminology
- SOC 32700 - Crime, Deviance And Mass Media
- SOC 32800 - Criminal Justice
- SOC 35600 - Hate And Violence
- SOC 41900 - Sociology Of Law
- SOC 42600 - Social Deviance And Control
- AGRY 25500 - Soil Science or
- AGRY 27000 - Forest Soils
- BCHM 30700 - Biochemistry or
- CHM 33300 - Principles Of Biochemistry or
- CHM 33900 - Biochemistry: A Molecular Approach
- BCHM 30900 - Biochemistry Laboratory or
- CHM 33901 - Biochemistry Laboratory
- BCHM 56100 - General Biochemistry I or
- CHM 53300 - Introductory Biochemistry
- BIOL 20300 - Human Anatomy And Physiology or
- BIOL 20400 - Human Anatomy And Physiology or
- CHM 32100 - Analytical Chemistry I or
- CHM 22400 - Introductory Quantitative Analysis or
- CHM 32300 - Analytical Chemistry I Honors
- CHM 25500 - Organic Chemistry For The Life Sciences I or
- CHM 25700 - Organic Chemistry or
- CHM 26505 - Organic Chemistry I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I or
- CHM 25701 - Organic Chemistry Laboratory or
- CHM 26500 - Organic Chemistry Laboratory I or

- CHM 26700 - Organic Chemistry Laboratory I Honors
- PHYS 21800 - General Physics or
- PHYS 17200 - Modern Mechanics or
- PHYS 22000 - General Physics or
- PHYS 23300 - Physics For Life Sciences I
- PHYS 21900 - General Physics II or
- PHYS 22100 - General Physics or
- PHYS 23400 - Physics For Life Sciences II

## Notes

- Departmental permission is not required to enroll in this minor.

## Disclaimer

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## **Insect Biology Minor**

### Requirements for the Minor (15 credits)

#### Required Courses (3 credits)

- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory

#### Selective Courses (12 credits)

- ENTM 10500 - Insects: Friend And Foe
- ENTM 21000 - Introduction To Insect Behavior
- ENTM 22840 - Forensic Entomology Principles
- ENTM 22841 - Forensic Entomology Principles Lab
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 31100 - Insect Ecology
- ENTM 31200 - Plant-Insect Chemical Ecology
- ENTM 32810 - Practical Molecular Biology
- ENTM 32820 - Medico-Legal Entomology
- ENTM 33500 - Introduction To Insect Identification
- ENTM 35300 - Insecticides And Environment
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- ENTM 41002 - Insects Of Agricultural Crops
- ENTM 42820 - Carrion Ecology
- ENTM 52500 - Medical And Veterinary Entomology

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Program Information

### Insect Biology Supplemental Information

#### Directed Science Selective (3 credits)

- AGRY 48000 - Plant Genetics
- AGRY 51100 - Population Genetics
- AGRY 52000 - Principles And Methods Of Plant Breeding
- ANSC 51100 - Population Genetics
- ANSC 51400 - Animal Biotechnology
- BCHM 22100 - Analytical Biochemistry
- BCHM 36100 - Molecules
- BIOL 22100 - Introduction To Microbiology
- BIOL 48100 - Eukaryotic Genetics
- BTNY 42000 - Plant Cellular And Developmental Biology
- CHM 22400 - Introductory Quantitative Analysis
- CHM 25500 - Organic Chemistry For The Life Sciences I
- ENTM 32810 - Practical Molecular Biology
- PHYS 22100 - General Physics

## Department of Food Science

### Overview

The Department of Food Science at Purdue University is committed to impacting the world food system and quality of life by educating and training undergraduate and graduate students for careers in industry, government, and academia. Our mission is to expand and transfer knowledge for continuous improvement of the safety, quality, value, and security of the world's food supply through basic research and outreach programs.

Our faculty, staff, and students are located on Purdue University's main campus in the **Philip E. Nelson Hall of Food Science, 745 Agriculture Mall Drive, West Lafayette, Indiana 47907**. This building provides excellent research laboratories, as well as specialized facilities such as the sensory evaluation laboratory, pilot scale-manufacturing plant, student product development and innovation laboratory, and enology library for us to engage with the food and beverage industry and government partners.

### Faculty (website)

## **Department of Food Science (website)**

### **Contact Information**

Department of Food Science

Purdue University

Nelson Hall of Food Science  
745 Agriculture Mall Drive  
West Lafayette, IN 47907  
Phone: (765) 494-8256

Email: [foodsci@purdue.edu](mailto:foodsci@purdue.edu)

The main office for the department is located in Room 2211 of the NLSN Building.

### **Current and Prospective Undergraduate Students (website)**

### **Graduate Information**

For Graduate Information please see [Food Sciences Graduate Program Information](#) .

### **Baccalaureate**

#### **Fermentation Science, BS**

The field of Fermentation Science integrates scientific disciplines, such as microbiology and biochemistry, with process engineering to discover ways to use microbes as biotechnological factories to produce goods of societal value, from foods to biofuels to pharmaceuticals. A fermentation scientist possesses the skills necessary to engineer microbes to convert diverse feedstocks into value-added products, design and operate fermentation processes, and recover and refine the synthesized products. Graduates apply scientific knowledge and economic principles to biotechnology and fermentation operation, research, development, and marketing or pursue graduate studies in biotechnology, applied microbiology, or biological engineering.

#### **Degree Requirements**

#### **120 Credits Required**

## Departmental/Program Major Courses (33 credits)

### Required Major Courses (33 credits)

- FS 16100 - Science Of Food (satisfies Science, Technology, and Society for core)
- FS 16300 - Introduction To Fermentation Sciences
- FS 29800 - Sophomore Seminar
- FS 34100 - Food Processing I
- FS 36100 - Food Plant Sanitation
- FS 36200 - Food Microbiology
  - ◆ or
  - BIOL 43800 - General Microbiology ◆
  - FS 36300 - Food Microbiology Laboratory
    - ◆ or
    - BIOL 43900 - Laboratory In General Microbiology ◆
    - FS 37200 - Fermentation Microbiology
    - FS 37300 - Fermentation Microbiology Laboratory
    - FS 40100 - Fermentation Processing
    - FS 40200 - Fermentation Processing Laboratory
    - FS 44400 - Statistical Process Control
    - FS 48200 - Food Science Senior Seminar
    - FS 48300 - Fermentation Capstone
    - Fermentation Products Selective - Credit Hours: 1.00
    - General Fermentation Selectives - Credit Hours: 5.00

### Other Departmental /Program Course Requirements (80-81 credits)

- ABE 22600 - Biotechnology Laboratory I ◆
- ABE 22700 - Biotechnology Laboratory II ◆
- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11800 - Introduction To Food Science Academic Programs
- BCHM 30700 - Biochemistry ◆
- BCHM 30900 - Biochemistry Laboratory
- BIOL 11000 - Fundamentals Of Biology I ◆
- BIOL 11100 - Fundamentals Of Biology II ◆
- BIOL 23100 - Biology III: Cell Structure And Function ◆
- BIOL 24100 - Biology IV: Genetics And Molecular Biology ◆
- CHM 11500 - General Chemistry ◆ (satisfies Science for core)
- CHM 11600 - General Chemistry ◆ (satisfies Science for core)
- CHM 25700 - Organic Chemistry ◆
- CHM 25701 - Organic Chemistry Laboratory
- CHM 32100 - Analytical Chemistry I
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MA 16020 - Applied Calculus II
- PHYS 22000 - General Physics ◆
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or

- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Professional Communications Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00 - 4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ Level) - Credit Hours: 3.00

## Electives (6-7 credits)

- Electives - Credit Hours: 6.00 - 7.00

## Additional Requirements

[Click here for Food Science Department Supplemental Information](#)

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.



# University Requirements

## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Program Requirements

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11800 - Introduction To Food Science Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11500 - General Chemistry ♦
- FS 16100 - Science Of Food
- MA 16010 - Applied Calculus I

## 15 Credits

### Spring 1st Year

- BIOL 11100 - Fundamentals Of Biology II ♦
- CHM 11600 - General Chemistry ♦
- FS 16300 - Introduction To Fermentation Sciences
- MA 16020 - Applied Calculus II
- Elective - Credit Hours: 2.00

## 16 Credits

### Fall 2nd Year

- ABE 22600 - Biotechnology Laboratory I ♦
- BIOL 23100 - Biology III: Cell Structure And Function ♦
- CHM 25700 - Organic Chemistry ♦
- CHM 25701 - Organic Chemistry Laboratory
- FS 29800 - Sophomore Seminar
- STAT 30100 - Elementary Statistical Methods

## 14 Credits

### Spring 2nd Year

- ABE 22700 - Biotechnology Laboratory II ♦
- BCHM 30700 - Biochemistry ♦
- BCHM 30900 - Biochemistry Laboratory
- BIOL 24100 - Biology IV: Genetics And Molecular Biology  
♦
- Written Communication Selective - Credit Hours: 3.00 - 4.00
- **Economics Selective** - Credit Hours: 3.00
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics

## 15-16 Credits

### Fall 3rd Year

- FS 36100 - Food Plant Sanitation
- FS 36200 - Food Microbiology ♦  
or
- BIOL 43800 - General Microbiology ♦

- FS 36300 - Food Microbiology Laboratory ♦
- or
- BIOL 43900 - Laboratory In General Microbiology ♦
- General Fermentation Selective - Credit Hours - 2.00

**Credit Hours:** 2.0

- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15 Credits

## Spring 3rd Year

- FS 37200 - Fermentation Microbiology
- FS 37300 - Fermentation Microbiology Laboratory
- Oral Communication Selective - Credit Hours: 3.00
- PHYS 22000 - General Physics
- ♦
- Written or Oral Communication Selective (20000+ Level) - Credit Hours: 3.00
- Fermentation Products Selective - Credit Hours: 1.00

15 Credits

## Fall 4th Year

- CHM 32100 - Analytical Chemistry I
- FS 34100 - Food Processing I
- FS 40100 - Fermentation Processing
- FS 40200 - Fermentation Processing Laboratory
- FS 44400 - Statistical Process Control
- FS 48200 - Food Science Senior Seminar
- Professional Communication Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

15 Credits

## Spring 4th Year

- FS 48300 - Fermentation Capstone
- Fermentation Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective (30000+) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00 - 3.00

14-15 Credits

Notes

- 2.0 GPA required for Bachelor of Science degree.
- Minimum GPA of 2.50 in FS core classes.
- Students must meet a minimum GPA  $\geq 2.50$  in math and science courses to enroll in upper division FS courses.
- Consultation with an advisor may result in an altered plan customized for an individual student.

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Food Science, BS

### About the Program

The field of Food Science applies science, such as microbiology and biochemistry, to discover ways to improve the taste, nutrition, and value of the food supply. A food scientist possesses the skills necessary to convert raw food products into safe, attractive foods and beverages. Graduates apply scientific knowledge and economic principles to food production, storage, distribution, product development, quality control, inspection, and sales, or they pursue graduate studies in food processing, microbiology, or chemistry.

Food Science Website

Food Science Major Change (CODO) Requirements

### Degree Requirements

## 120 Credits Required

## Departmental/Program Major Courses (37 credits)

### Required Major Courses (37 credits)

- FS 16100 - Science Of Food (satisfies Science, Technology and Society for core)
- FS 24500 - Food Packaging
- FS 29800 - Sophomore Seminar
- FS 34000 - Introduction To Food Law And Regulations
- FS 34100 - Food Processing I
- FS 34200 - Food Processing I Laboratory
- FS 36100 - Food Plant Sanitation
- FS 36200 - Food Microbiology
- FS 36300 - Food Microbiology Laboratory
- FS 43500 - Sensory Science
- FS 44200 - Food Processing II
- FS 44300 - Food Product Design (Capstone)
- FS 44400 - Statistical Process Control
- FS 44700 - Food Processing II Laboratory
- FS 45300 - Food Chemistry
- FS 45400 - Food Chemistry Laboratory
- FS 46700 - Food Analysis
- FS 46900 - Food Analysis Laboratory
- FS 48200 - Food Science Senior Seminar
- FS 53000 - Food Ingredient Technology
- NUTR 31500 - Fundamentals Of Nutrition

## Other Departmental/Program Course Requirements (70-71 credits)

### Course Requirements (67-68 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11800 - Introduction To Food Science Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 11100 - Fundamentals Of Biology II ♦
- BIOL 22100 - Introduction To Microbiology ♦
- CHM 11500 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11600 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry ♦
- CHM 25701 - Organic Chemistry Laboratory
- BCHM 30700 - Biochemistry ♦
- BCHM 30900 - Biochemistry Laboratory
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
- MA 16020 - Applied Calculus II
- PHYS 22000 - General Physics ♦
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics

- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ Level) - Credit Hours: 3.00

## Professional Communications Selective (3 credits)

- COM 21000 - Addressing Public Issues
- COM 22400 - Communicating In The Global Workplace
- COM 25200 - Writing For Mass Media
- COM 31400 - Advanced Presentational Speaking
- COM 31500 - Speech Communication Of Technical Information
- COM 32000 - Small Group Communication
- COM 32500 - Interviewing: Principles And Practice
- COM 37400 - Social Interaction Skills: Assessment And Development
- COM 41500 - Discussion Of Technical Problems
- ENGL 30400 - Advanced Composition
- ENGL 41900 - Multimedia Writing
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENGL 43300 - Writing Proposals And Grants
- NUTR 42400 - Communication Techniques In Foods And Nutrition

## Electives (12-13 credits)

- Electives - Credit Hours: 12.00-13.00

## Grade Requirements

*Clearly list any/all grade requirements within the program.*

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.
- Minimum GPA of 2.50 in FS core classes and NUTR 31500 is required for graduation
- Students must meet a minimum GPA  $\geq 2.50$  in math and science courses to enroll in upper division FS courses.

## Course Requirements and Notes

*Double-counting policy - where is it allowed and not allowed; specific notes or requirements about courses; repeatable limits, study abroad, etc.*

## Non-course / Non-credit Requirements

*Degree requirements which are not associated to a course. For example: portfolio, work experience, certifications. Should equal 0 credits.*

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

*College, department, major transfer credit (including any/all undistributed credit, TR graded course, AP/IB credit, etc.) should be clearly stated. Can transfer credit be applied to the major? If yes, how and where?*

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Additional Information

*Any additional information that does not fit into any of the categories above.*

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11800 - Introduction To Food Science Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11500 - General Chemistry ♦
- FS 16100 - Science Of Food



- MA 16010 - Applied Calculus I

## 15 Credits

### Spring 1st Year

- BIOL 11100 - Fundamentals Of Biology II ♦
- CHM 11600 - General Chemistry ♦
- MA 16020 - Applied Calculus II
- Written Communication Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 2.00

## 16-17 Credits

### Fall 2nd Year

- BIOL 22100 - Introduction To Microbiology ♦
- CHM 25700 - Organic Chemistry ♦
- CHM 25701 - Organic Chemistry Laboratory
- FS 29800 - Sophomore Seminar
- STAT 30100 - Elementary Statistical Methods ♦
- Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- BCHM 30700 - Biochemistry ♦
- BCHM 30900 - Biochemistry Laboratory
- FS 24500 - Food Packaging
- PHYS 22000 - General Physics ♦
- Elective - Credit Hours: 3.00
- **Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics

## 15 Credits

### Fall 3rd Year

- FS 34100 - Food Processing I
- FS 34200 - Food Processing I Laboratory
- FS 36100 - Food Plant Sanitation

- FS 36200 - Food Microbiology
- FS 36300 - Food Microbiology Laboratory
- NUTR 31500 - Fundamentals Of Nutrition
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00

## 17 Credits

### Spring 3rd Year

- FS 45300 - Food Chemistry
- FS 45400 - Food Chemistry Laboratory
- FS 46700 - Food Analysis
- FS 46900 - Food Analysis Laboratory
- Written or Oral Communication Selective (20000+ Level) - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- FS 44200 - Food Processing II
- FS 44400 - Statistical Process Control
- FS 44700 - Food Processing II Laboratory
- FS 48200 - Food Science Senior Seminar
- FS 53000 - Food Ingredient Technology
- Professional Communication Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective - Credit Hours: 3.00

## 12 Credits

### Spring 4th Year

- FS 34000 - Introduction To Food Law And Regulations
- FS 43500 - Sensory Science
- FS 44300 - Food Product Design (Capstone)
- Humanities or Social Sciences Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective (30000+) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 13-14 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

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The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Minor

### Fermentation Sciences Minor

## About this Program:

The fermentation science minor enables students enrolled in the program to develop specific science-based knowledge, skills and expertise in the field of fermentation science to broaden their employment and/or entrepreneurial opportunities.

Currently, there is enormous interest in the use of microorganisms at an industrial level in fields such as the pharmaceutical, chemical, and food industries. Even though fermentation has been used since ancient times as a method for food preservation, the industrial potential for sustainable production of many types of bio-based materials (ranging from foods and beverages, to biofuels, bioplastics, biopharmaceuticals, and fine chemicals) is only beginning to be explored.

## Requirements for the Minor (18 credits)

### Required Courses (3 credits)

- FS 16300 - Introduction To Fermentation Sciences

### Minor Selectives - Choose Two (6 credits)

- BCHM 30700 - Biochemistry or
- BCHM 46200 - Metabolism or
- BCHM 56100 - General Biochemistry I or
- MCMP 20800 - Biochemistry For Pharmaceutical Sciences

AND

- BIOL 22100 - Introduction To Microbiology or
- BIOL 43800 - General Microbiology

## Additional Courses (9 credits)

- ABE 22600 - Biotechnology Laboratory I
- ABE 22700 - Biotechnology Laboratory II
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 58000 - Process Engineering Of Renewable Resources
- ABE 59100 - Special Topics - *Title: Principles of Systems and Synthetic Biology (3 credits)*
- FS 37200 - Fermentation Microbiology
- FS 37300 - Fermentation Microbiology Laboratory
- FS 38100 - Industrial Fermentation Products
- FS 38300 - Fermented Beverage Products
- FS 40100 - Fermentation Processing
- FS 40200 - Fermentation Processing Laboratory
- FS 47000 - Wine Appreciation
- FS 49100 - Special Assignments In Food Science - *Titles: Dairy Products (1 credit); Anaerobic Microbial Physiology (3 credits); Crucial Metabolic Pathways in Food Fermentation (1 credit)*
- FS 59100 - Special Topics - *Title: Commercial Food and Beverage Fermentations Lab (1 credit)*
- GER 28000 - German Special Topics - *Title: Beer & Brewing in Germany (3 credits)*
- HORT 50600 - Commercial Grape And Wine Production

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Food Science Minor

### Requirements for the Minor (18 credits)

#### Required Courses (11 credits)

- FS 16100 - Science Of Food
- FS 34100 - Food Processing I
- FS 36200 - Food Microbiology
- FS 45300 - Food Chemistry

#### Selective Courses (7 credits)

- ANSC 35100 - Meat Science
- ANSC 35101 - Meat Science Laboratory
- NUTR 31500 - Fundamentals Of Nutrition
- FS 10000-59999\* - All Food Sciences courses - Credit Hours: 3.00

## Notes

- Department permission is not required to enroll in this minor.
- \* Maximum of 3 credits of independent study (FS 29100 or FS 49100).

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Pet Food Processing Minor**

### Requirements for the Minor (21 credits)

#### Required Courses (21 credits)

- ANSC 10600 - Biology Companion Animal \*
- ANSC 32400 - Applied Animal Nutrition
- ANSC 44600 - Companion Animal Management
- FS 16100 - Science Of Food
- FS 34100 - Food Processing I
- FS 34200 - Food Processing I Laboratory
- FS 36200 - Food Microbiology
- FS 44200 - Food Processing II
- FS 44700 - Food Processing II Laboratory

## Notes

- Department permission is not required to enroll in this minor.
- \* (3) ANSC 10200 (Introduction to Animal Agriculture) can be substituted for ANSC 10600, but ANSC 10600 is preferred for this minor.

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Program Information**

### **Food Science Department Supplemental Information**

#### **Professional Communications Selective (3 Credits)**

- COM 21000 - Addressing Public Issues
- COM 22400 - Communicating In The Global Workplace
- COM 25200 - Writing For Mass Media
- COM 31400 - Advanced Presentational Speaking
- COM 31500 - Speech Communication Of Technical Information
- COM 32000 - Small Group Communication
- COM 32500 - Interviewing: Principles And Practice
- COM 37400 - Social Interaction Skills: Assessment And Development
- COM 41500 - Discussion Of Technical Problems
- ENGL 30400 - Advanced Composition
- ENGL 41900 - Multimedia Writing
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENGL 43300 - Writing Proposals And Grants
- NUTR 42400 - Communication Techniques In Foods And Nutrition

#### **General Fermentation Selective for Fermentation Science (5 Credits)**

- ABE 37000 - Biological/Microbial Kinetics And Reaction Engineering
- ABE 44000 - Cell And Molecular Design Principles
- ABE 30400 - Bioprocess Engineering Laboratory
- ABE 55800 - Process Design For Food And Biological Systems
- ABE 58000 - Process Engineering Of Renewable Resources
- ABE 59100 - Special Topics (Title: Principles of Systems and Synthetic Biology)
- ABE 51100 - Drug Development
- ABE 51200 - Good Regulatory Practices
- ANTH 25600 - Archaeology Of Beer
- BME 20500 - Biomolecular And Cellular Systems Laboratory
- FS 45300 - Food Chemistry
- FS 45400 - Food Chemistry Laboratory
- FS 46700 - Food Analysis
- FS 46900 - Food Analysis Laboratory
- FS 47000 - Wine Appreciation
- FS 59100 - Special Topics (Title: Microbial Genomics and Metabolism)
- GER 28000 - German Special Topics (Title: Beer and Brewing in Germany)
- IPPH 56200 - Introduction To Pharmaceutical Manufacturing Processes

## **Department of Forestry and Natural Resources**

### **Overview**

Welcome to the Department of Forestry and Natural Resources (FNR)! As one of the nation's elite programs in ecology and evolutionary biology, it is our mission to develop and disseminate knowledge associated with the protection, management, and sustainable use of terrestrial and aquatic ecosystems. FNR is training the next generation of professionals in the natural resource sciences, which includes aquatic science, forestry and wildlife.

## **Faculty (website)**

## **Department of Forestry and Natural Resources (FNR) (website)**

## **Contact Information**

The Department of Forestry and Natural Resources

Purdue University

Pfendler Hall  
715 West State Street  
West Lafayette IN 47907-2061

Phone: 765-494-3591

Email: [joinfnr@purdue.edu](mailto:joinfnr@purdue.edu)

The main office for the department is located in Room 125 in PFEN Hall.

## **Current Undergraduate Students (website)**

## **Future Undergraduate Students (website)**

## **Graduate Information**

For Graduate Information please see [Forestry and Natural Resources Graduate Program Information](#) .

## **Baccalaureate**

## **Aquatic Sciences: Fisheries Concentration, BS**

### **About the Program**

The Fisheries concentration will provide students with applied training relevant to fisheries science and management fields. This concentration builds on traditional fisheries programs by offering course in Fish Population Dynamics and Practical Fisheries Management. The Fisheries concentration is developed such that when a student completes the major/concentration she/he would have completed all coursework necessary to qualify as a Certified Fisheries Professional through the American Fisheries Society.

Forestry and Natural Resources

Aquatic Sciences Major Change (CODO) Requirements

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (66-67 credits)

### Required Major Courses (55-56 credits)

- FNR 12500 - Environmental Science And Conservation
- FNR 20100 - Marine Biology
- FNR 21000 - Natural Resource Information Management ♦
- FNR 23000 - The World's Forests And Society
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- FNR 27000 - Landscape-Level Planning
- FNR 30500 - Conservation Genetics
- FNR 35100 - Aquatic Sampling Techniques
- FNR 37010 - Natural Resources Practicum
- FNR 37100 - Fisheries And Aquatic Sciences Practicum
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 38400 - Statistics For Natural Resources
- FNR 38500 - Fish Biology And Ecology
- FNR 40100 - Limnology
- FNR 45600 - Fish And Marine Population Dynamics
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 52700 - Ecotoxicology or
- FNR 52800 - Wildlife And Environmental Forensics or
- FNR 52900 - Disease Ecology

### Required Concentration Courses (11 credits)

- FNR 45200 - Aquaculture
- FNR 45700 - Practical Fisheries Management (Capstone)
- **Aquatics Selective (6 credits)**
- AGRY 33700 - Environmental Hydrology
- FNR 31300 - Aquaponics
- FNR 35910 - Spatial Ecology
- FNR 35950 - Spatial Ecology Laboratory
- FNR 37800 - Marine Biology Practicum
- FNR 45300 - Fish Physiology
- FNR 45800 - Advanced Marine Biology



- FNR 52700 - Ecotoxicology
- FNR 52800 - Wildlife And Environmental Forensics
- FNR 52900 - Disease Ecology
- FNR 54300 - Conservation Biology I

## Other Departmental/Program Course Requirements (50-53 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 28600 - Introduction To Ecology And Evolution ♦
- BTNY 11000 - Introduction To Plant Science ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- STAT 30100 - Elementary Statistical Methods ♦
- AGRY 25500 - Soil Science or
- AGRY 27000 - Forest Soils
- **Microeconomics Selective - Credit Hours: 3.00** (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- **Ethics Selective - Credit Hours: 3.00** (satisfies Human Cultures: Humanities for core)
- PHIL 11100 - Introduction To Ethics or
- PHIL 28000 - Ethics And Animals or
- PHIL 29000 - Environmental Ethics
- **Physical Science Selective - Credit Hours: 3.00-4.00 \*\***
- AGRY 33700 - Environmental Hydrology or
- CHM 25500 - Organic Chemistry For The Life Sciences I or
- EAPS 10400 - Oceanography or
- PHYS 22000 - General Physics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (0-4 credits)

- Electives - Credit Hours: 0.00-4.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- **\*\* Physical Science Selective:** Other courses in astronomy, chemistry, earth science, geology, hydrology, meteorology, physics, and soil science, if acceptable for the American Fisheries Society "Certified Fisheries Professional" certification. Contact your academic advisor for approval.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11100 - General Chemistry ♦
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-16 Credits

### Spring 1st Year

- BTNY 11000 - Introduction To Plant Science ♦

- CHM 11200 - General Chemistry ♦
- FNR 12500 - Environmental Science And Conservation
- Oral Communication Selective - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-4.00

## 13-17 Credits

### Fall 2nd Year

- FNR 20100 - Marine Biology
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles
- STAT 30100 - Elementary Statistical Methods ♦
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- BIOL 28600 - Introduction To Ecology And Evolution ♦
- FNR 21000 - Natural Resource Information Management ♦
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- FNR 35100 - Aquatic Sampling Techniques
- AGRY 25500 - Soil Science or
- AGRY 27000 - Forest Soils

## 15 Credits

### Summer Session

- FNR 37010 - Natural Resources Practicum
- FNR 37100 - Fisheries And Aquatic Sciences Practicum

## 6 Credits

### Fall 3rd Year

- FNR 23000 - The World's Forests And Society
- FNR 45600 - Fish And Marine Population Dynamics
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- Humanities or Social Science Selective - Credit Hours: 3.00

## 13 Credits

### Spring 3rd Year

- FNR 30500 - Conservation Genetics
- FNR 38400 - Statistics For Natural Resources
- FNR 38500 - Fish Biology And Ecology
- FNR 40100 - Limnology

## 13 Credits

### Fall 4th Year

- FNR 27000 - Landscape-Level Planning
- FNR 45700 - Practical Fisheries Management
- Aquatics Sciences Major Selective - Credit Hours: 3.00
- Aquatics Sciences Major Selective - Credit Hours: 3.00
- Physical Science Selective \*\*- Credit Hours: 3.00-4.00

## 12-13 Credits

### Spring 4th Year

- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 45200 - Aquaculture
- FNR 52700 - Ecotoxicology or
- FNR 52800 - Wildlife And Environmental Forensics or
- FNR 52900 - Disease Ecology
- PHIL 11100 - Introduction To Ethics or
- PHIL 28000 - Ethics And Animals or
- PHIL 29000 - Environmental Ethics
- Humanities or Social Science Selective - Credit Hours: 3.00

## 14-15 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Aquatic Sciences: Marine and Freshwater Biology Concentration, BS**

### About the Program

The Marine and Freshwater Biology concentration provides education and training opportunities for students broadly interested in aquatic sciences. Marine-science-focused courses are included in this concentration in response to interest shown by a large number of Purdue students enrolled in classes such as FNR 20100 Marine Biology. These courses include a Marine Biology Practicum experience along the Gulf Coast, an Advanced Marine Biology course and a physical sciences requirement (for example, oceanography). This concentration provides students with rigorous training in the marine sciences and places Purdue among the leaders in marine science education in the Midwest. The AQSC major also offers a new course in Limnology - a critical knowledge area for marine and freshwater biologists.

Forestry and Natural Resources

Aquatic Sciences Major Change (CODO) Requirements

### Degree Requirements

## **120 Credits Required**

### Departmental/Program Major Courses (64-65 credits)

### Required Major Courses (55-56 credits)

- FNR 12500 - Environmental Science And Conservation (satisfies Science, Technology and Society for core)
- FNR 20100 - Marine Biology
- FNR 21000 - Natural Resource Information Management ♦
- FNR 23000 - The World's Forests And Society

- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- FNR 27000 - Landscape-Level Planning
- FNR 30500 - Conservation Genetics
- FNR 35100 - Aquatic Sampling Techniques
- FNR 37010 - Natural Resources Practicum
- FNR 37100 - Fisheries And Aquatic Sciences Practicum
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 38400 - Statistics For Natural Resources
- FNR 38500 - Fish Biology And Ecology
- FNR 40100 - Limnology
- FNR 45600 - Fish And Marine Population Dynamics
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 52700 - Ecotoxicology or
- FNR 52800 - Wildlife And Environmental Forensics or
- FNR 52900 - Disease Ecology

## Concentration Courses (9 credits)

### Required Courses (6 credit)

- FNR 37800 - Marine Biology Practicum
- FNR 45800 - Advanced Marine Biology

### Aquatic Sciences Selective (3 credits)

- AGRY 33700 - Environmental Hydrology
- FNR 31300 - Aquaponics
- FNR 35910 - Spatial Ecology
- FNR 35950 - Spatial Ecology Laboratory
- FNR 45200 - Aquaculture
- FNR 45300 - Fish Physiology
- FNR 45700 - Practical Fisheries Management
- FNR 54300 - Conservation Biology I

## Other Departmental /Program Course Requirements (50-53 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- BIOL 28600 - Introduction To Ecology And Evolution ♦
- BTNY 11000 - Introduction To Plant Science ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- STAT 30100 - Elementary Statistical Methods ♦
- AGRY 25500 - Soil Science or
- AGRY 27000 - Forest Soils

**Microeconomics Selective - Credit Hours: 3.00** (satisfies Human Cultures: Behavioral/Social Sciences for core)

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics

**Ethics Selective - Credit Hours: 3.00** (satisfies Human Cultures: Humanities for core)

- PHIL 11100 - Introduction To Ethics or
- PHIL 28000 - Ethics And Animals or
- PHIL 29000 - Environmental Ethics

**Physical Science Selective - Credit Hours: 3.00-4.00\*\***

- AGRY 33700 - Environmental Hydrology or
- CHM 25500 - Organic Chemistry For The Life Sciences I or
- EAPS 10400 - Oceanography or
- PHYS 22000 - General Physics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (2-6 credits)

- Electives - Credit Hours: 2.00-6.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- **\*\* Physical Science Selective:** Other courses in astronomy, chemistry, earth science, geology, hydrology, meteorology, physics, and soil science, if acceptable for the American Fisheries Society "Certified Fisheries Professional" certification. Contact your academic advisor for approval.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

- Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements



- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11100 - General Chemistry ♦
- Written Communication Selective - Credit Hours: 3.00-4.00
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I

### 14-16 Credits

### Spring 1st Year

- FNR 12500 - Environmental Science And Conservation
- BTNY 11000 - Introduction To Plant Science ♦
- CHM 11200 - General Chemistry ♦
- Oral Communication Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

### 15-16 Credits

### Fall 2nd Year

- FNR 20100 - Marine Biology
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles
- STAT 30100 - Elementary Statistical Methods ♦
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics

- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- BIOL 28600 - Introduction To Ecology And Evolution ♦
- FNR 21000 - Natural Resource Information Management ♦
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- FNR 35100 - Aquatic Sampling Techniques
- AGRY 25500 - Soil Science or
- AGRY 27000 - Forest Soils

## 15 Credits

### Summer Session

- FNR 37010 - Natural Resources Practicum
- FNR 37100 - Fisheries And Aquatic Sciences Practicum

## 6 Credits

### Fall 3rd Year

- FNR 23000 - The World's Forests And Society
- FNR 37800 - Marine Biology Practicum
- FNR 45600 - Fish And Marine Population Dynamics
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy

## 13 Credits

### Spring 3rd Year

- FNR 30500 - Conservation Genetics
- FNR 38400 - Statistics For Natural Resources
- FNR 38500 - Fish Biology And Ecology
- FNR 40100 - Limnology

## 13 Credits

### Fall 4th Year

- FNR 27000 - Landscape-Level Planning
- PHIL 11100 - Introduction To Ethics or

- PHIL 28000 - Ethics And Animals or
- PHIL 29000 - Environmental Ethics
- **Physical Science Selective - Credit Hours: 3.00-4.00\*\***
- AGRY 33700 - Environmental Hydrology
- CHM 25500 - Organic Chemistry For The Life Sciences I
- EAPS 10400 - Oceanography
- PHYS 22000 - General Physics
- Aquatics Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## 13-14 Credits

### Spring 4th Year

- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 45800 - Advanced Marine Biology
- FNR 52700 - Ecotoxicology or
- FNR 52800 - Wildlife And Environmental Forensics or
- FNR 52900 - Disease Ecology
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-3.00

## 12-14 Credits

### Pre-Requisite Information

For pre-requisite information, [click here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

### Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Forestry: Forest Management Concentration, BSFOR**

### About the Program

Learn to apply biological, ecological, economic and social knowledge as you develop and implement sustainable forest management plans. Studies emphasize understanding how forest ecosystems function, the role of natural and human disturbance, and ecosystem resilience. The Forestry major was recently revised to allow students to specialize in one of four concentrations: forest management, forest science, urban forestry, and sustainable biomaterials (the latter is a technology-based degree for making products out of wood). This major prepares the student for careers with public agencies such as state divisions of forestry or the U.S. Forest Service (forest management concentration), private industry and consulting firms (urban forestry, sustainable biomaterials) and graduate school (forest science). The major is accredited by the Society of American Foresters.

Forestry Website

Forestry Major Change (CODO) Requirements

### Degree Requirements

## **124 Credits Required**

### Departmental/Program Major Courses (68 credits)

#### Required Major Courses (36 credits)

- FNR 12500 - Environmental Science And Conservation
- FNR 21000 - Natural Resource Information Management ♦
- FNR 22500 - Dendrology
- FNR 33100 - Forest Ecosystems
- FNR 35300 - Natural Resources Measurement
- FNR 35700 - Fundamental Remote Sensing
- FNR 37010 - Natural Resources Practicum
- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37200 - Forestry Practicum
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 40700 - Forest Economics
- FNR 43400 - Tree Physiology
- FNR 43900 - Silviculture

#### Forestry Management Concentration Courses (32 credits)

## Forest Management Concentration Required Courses (26 credits)

- FNR 23000 - The World's Forests And Society
- FNR 27000 - Landscape-Level Planning
- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 35500 - Quantitative Methods For Resource Management
- FNR 40910 - Forest Resources Management
- FNR 43300 - Grand Challenges In Forest Management
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- FNR 38400 - Statistics For Natural Resources or
- ENTM 30100 - Experimentation And Analysis

## Forest Health Selectives (3 credits)

- BTNY 30100 - Introductory Plant Pathology
- BTNY 52500 - Intermediate Plant Pathology
- BTNY 53500 - Plant Disease Epidemiology
- BTNY 55800 - Pathogens Of Plants
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 33300 - Fire Effects In Forest Environments

## Forestry Selectives (3 credits)

- FNR 30500 - Conservation Genetics
- FNR 31110 - Identification And Basic Properties Of Wood
- FNR 35900 - Spatial Ecology And GIS
- FNR 44400 - Arboricultural Practices
- FNR 53500 - Forest Regeneration
- FNR 53600 - Ecology Of Disturbance
- FNR 53601 - Ecology Of Disturbance Practicum

## Other Departmental/Program Course Requirements (48-50 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- AGRY 27000 - Forest Soils
- BTNY 12000 - Principles Of Plant Biology I ♦
- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or

- MA 16500 - Analytic Geometry And Calculus I
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- ENGL 42000 - Business Writing or
- ENGL 42100 - Technical Writing
- **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Ethics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- PHIL 11100 - Introduction To Ethics
- PHIL 28000 - Ethics And Animals
- PHIL 29000 - Environmental Ethics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## Electives (6-8 credits)

- Electives - Credit Hours: 6.00-8.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

### Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement



- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Program Requirements

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- CHM 11100 - General Chemistry ♦
- BTNY 12000 - Principles Of Plant Biology I ♦
- MA 16010 - Applied Calculus I ♦ or
- MA 16500 - Analytic Geometry And Calculus I
- Oral Communication Selective - Credit Hours: 3.00

### 14-15 Credits

### Spring 1st Year

- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11200 - General Chemistry ♦
- FNR 12500 - Environmental Science And Conservation
- Written Communication Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 3.00

### 16-17 Credits

### Fall 2nd Year

- FNR 22500 - Dendrology
- STAT 30100 - Elementary Statistical Methods ♦
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- Humanities or Social Science Selective - Credit Hours: 3.00

### 15 Credits

### Spring 2nd Year

- AGRY 27000 - Forest Soils
- FNR 21000 - Natural Resource Information Management ♦

- FNR 35300 - Natural Resources Measurement
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- Elective - Credit Hours: 2.00

## 15 Credits

### Summer Session

- FNR 37010 - Natural Resources Practicum
- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37200 - Forestry Practicum

## 6 Credits

### Fall 3rd Year

- FNR 23000 - The World's Forests And Society
- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 33100 - Forest Ecosystems
- FNR 35700 - Fundamental Remote Sensing
- FNR 43400 - Tree Physiology

## 15 Credits

### Spring 3rd Year

- FNR 35500 - Quantitative Methods For Resource Management
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 40700 - Forest Economics
- FNR 38400 - Statistics For Natural Resources or
- ENTM 30100 - Experimentation And Analysis
- Humanities or Social Science Selective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- FNR 27000 - Landscape-Level Planning
- FNR 43900 - Silviculture
- ENGL 42000 - Business Writing or
- ENGL 42100 - Technical Writing
- PHIL 11100 - Introduction To Ethics or
- PHIL 28000 - Ethics And Animals or
- PHIL 29000 - Environmental Ethics

- Forest Health Selective - Credit Hours: 3.00
- Forestry Selective - Credit Hours: 3.00

## 16 Credits

## Spring 4th Year

- FNR 40910 - Forest Resources Management
- FNR 43300 - Grand Challenges In Forest Management
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-3.00

## 10-12 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Forestry: Forest Science Concentration, BSFOR**

### About the Program

Learn to apply biological, ecological, economic and social knowledge as you develop and implement sustainable forest management plans. Studies emphasize understanding how forest ecosystems function, the role of natural and human disturbance, and ecosystem resilience. The Forestry major was recently revised to allow students to specialize in one of four concentrations: forest management, forest science, urban forestry, and sustainable biomaterials (the latter is a technology-based degree for making products out of wood). This major prepares the student for careers with public agencies such as state divisions of forestry or the U.S. Forest Service (forest management concentration), private industry and consulting firms (urban forestry, sustainable biomaterials) and graduate school (forest science). The major is accredited by the Society of American Foresters.

Forestry Website

Forestry Major Change (CODO) Requirements

## Degree Requirements

# 124 Credits Required

## Departmental/Program Major Courses (70 credits)

### Required Major Courses (36 credits)

- FNR 12500 - Environmental Science And Conservation
- FNR 21000 - Natural Resource Information Management ♦
- FNR 22500 - Dendrology
- FNR 33100 - Forest Ecosystems
- FNR 35300 - Natural Resources Measurement
- FNR 35700 - Fundamental Remote Sensing
- FNR 37010 - Natural Resources Practicum
- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37200 - Forestry Practicum
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 40700 - Forest Economics
- FNR 43400 - Tree Physiology
- FNR 43900 - Silviculture

## Forest Science Concentration Courses (34 credits)

### Forest Science Concentration Required Courses (22 credits)

- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 35500 - Quantitative Methods For Resource Management
- FNR 38400 - Statistics For Natural Resources or
- ENTM 30100 - Experimentation And Analysis
- FNR 40910 - Forest Resources Management

- FNR 49900 - Thesis - Credit Hours: 4.00

### Forest Health Selectives (3 credits)

- BTNY 30100 - Introductory Plant Pathology
- BTNY 52500 - Intermediate Plant Pathology
- BTNY 53500 - Plant Disease Epidemiology
- BTNY 55800 - Pathogens Of Plants
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 33300 - Fire Effects In Forest Environments

### Forest Science Selectives (9 credits)

#### Biometrics and Statistics

- BIOL 58210 - Ecological Statistics
- STAT 50300 - Statistical Methods For Biology
- STAT 51200 - Applied Regression Analysis
- STAT 51400 - Design Of Experiments

#### Forest Ecology and Silviculture

- AGRY 34900 - Soil Ecology
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- BIOL 59100 - Field Ecology
- FNR 33300 - Fire Effects In Forest Environments
- FNR 53500 - Forest Regeneration
- FNR 53600 - Ecology Of Disturbance
- FNR 53601 - Ecology Of Disturbance Practicum
- FNR 54300 - Conservation Biology I

#### Forest Geospatial Analytics

- ASM 21600 - Introduction To Surveying
- AT 20900 - Civilian Unmanned Aerial Systems
- FNR 35900 - Spatial Ecology And GIS

#### Plant Biology

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 48000 - Plant Genetics
- AGRY 52000 - Principles And Methods Of Plant Breeding
- AGRY 52500 - Crop Physiology And Ecology
- BIOL 24100 - Biology IV: Genetics And Molecular Biology

- BIOL 39500 - Special Assignments
- BIOL 41500 - Introduction To Molecular Biology
- BIOL 47800 - Introduction To Bioinformatics
- BTNY 30200 - Plant Ecology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 42000 - Plant Cellular And Developmental Biology
- BTNY 55200 - Molecular Approaches In Plant Biology
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 53300 - Introductory Biochemistry
- FNR 30500 - Conservation Genetics

## Other Departmental/Program Course Requirements (48-50 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- AGRY 27000 - Forest Soils
- BTNY 12000 - Principles Of Plant Biology I ♦
- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- ENGL 42000 - Business Writing or
- ENGL 42100 - Technical Writing
- **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Ethics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- PHIL 11100 - Introduction To Ethics
- PHIL 28000 - Ethics And Animals
- PHIL 29000 - Environmental Ethics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## Electives (4-6 credits)

- Elective - Credit Hours: 4.00-6.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

# College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

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Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)

- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency website.

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- BTNY 12000 - Principles Of Plant Biology I ♦
- CHM 11100 - General Chemistry ♦
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Oral Communication Selective - Credit Hours: 3.00

### 14-15 Credits

### Spring 1st Year

- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11200 - General Chemistry ♦
- FNR 12500 - Environmental Science And Conservation
- Written Communication Selective - Credit Hours: 3.00-4.00



- Elective - Credit Hours: 3.00

## 16-17 Credits

### Fall 2nd Year

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 22500 - Dendrology
- STAT 30100 - Elementary Statistical Methods ♦
- Humanities or Social Science Selective - Credit Hours: 3.00

## 15 Credits

### Spring 2nd Year

- AGRY 27000 - Forest Soils
- FNR 21000 - Natural Resource Information Management ♦
- FNR 35300 - Natural Resources Measurement
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- Humanities or Social Science Selective - Credit Hours: 3.00

## 15 Credits

### Summer Session

- FNR 37010 - Natural Resources Practicum
- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37200 - Forestry Practicum

## 6 Credits

### Fall 3rd Year

- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 33100 - Forest Ecosystems
- FNR 35700 - Fundamental Remote Sensing
- FNR 43400 - Tree Physiology
- PHIL 11100 - Introduction To Ethics or
- PHIL 28000 - Ethics And Animals or
- PHIL 29000 - Environmental Ethics

## 15 Credits

## Spring 3rd Year

- FNR 35500 - Quantitative Methods For Resource Management
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 40700 - Forest Economics
- FNR 49900 - Thesis - Credit Hours: 1.00
- FNR 38400 - Statistics For Natural Resources or
- ENTM 30100 - Experimentation And Analysis
- Forest Science Selective - Credit Hours: 3.00

## 16 Credits

## Fall 4th Year

- ENGL 42000 - Business Writing or
- ENGL 42100 - Technical Writing
- FNR 43900 - Silviculture
- FNR 49900 - Thesis - Credit Hours: 1.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Forest Science Selective - Credit Hours: 3.00

## 13 Credits

## Spring 4th Year

- FNR 40910 - Forest Resources Management
- FNR 49900 - Thesis - Credit Hours: 2.00
- Forest Health Selective - Credit Hours: 3.00
- Forest Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-3.00

## 12-14 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Forestry: Sustainable Biomaterials Concentration, BSFOR

### About the Program

Learn to apply biological, ecological, economic and social knowledge as you develop and implement sustainable forest management plans. Studies emphasize understanding how forest ecosystems function, the role of natural and human disturbance, and ecosystem resilience. The Forestry major was recently revised to allow students to specialize in one of four concentrations: forest management, forest science, urban forestry, and sustainable biomaterials (the latter is a technology-based degree for making products out of wood). This major prepares the student for careers with public agencies such as state divisions of forestry or the U.S. Forest Service (forest management concentration), private industry and consulting firms (urban forestry, sustainable biomaterials) and graduate school (forest science). The major is accredited by the Society of American Foresters.

Forestry Website

Forestry Major Change (CODO) Requirements

### Degree Requirements

## 124 Credits Required

### Departmental/Program Major Courses (69 credits)

#### Required Major Courses (36 credits)

- FNR 12500 - Environmental Science And Conservation
- FNR 21000 - Natural Resource Information Management ♦
- FNR 22500 - Dendrology
- FNR 33100 - Forest Ecosystems
- FNR 35300 - Natural Resources Measurement
- FNR 35700 - Fundamental Remote Sensing
- FNR 37010 - Natural Resources Practicum

- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37200 - Forestry Practicum
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 40700 - Forest Economics
- FNR 43400 - Tree Physiology
- FNR 43900 - Silviculture

## Sustainable Biomaterials Concentration Courses (33 credits)

### Sustainable Biomaterials Required Courses (21 credits)

- FNR 22310 - Introduction To Environmental Policy
- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 31110 - Identification And Basic Properties Of Wood
- FNR 48410 - Sustainable Wood Products, Furniture Design And Manufacturing
- IET 23500 - Introduction To Systems Thinking And Process Improvement
- IET 31600 - Statistical Quality Control
- IET 33400 - Economic Analysis For Technology Systems

### Sustainable Biomaterials Selectives (12 credits)

- AD 49000 - Special Problems In Art And Design
- AD 53500 - Furniture Design
- AGE 31000 - Farm Organization
- AGE 32100 - Principles Of Commodity Marketing
- AGE 33100 - Principles Of Industrial Selling
- CGT 11000 - Technical Graphics Communications
- CSR 30900 - Leadership Strategies
- CSR 33200 - Cross-Cultural Marketing And International Retailing
- ENTR 31000 - Marketing And Management For New Ventures
- FNR 23000 - The World's Forests And Society
- FNR 35500 - Quantitative Methods For Resource Management
- FNR 40910 - Forest Resources Management
- IET 43530 - Operations Planning And Management
- IET 43540 - Facilities Planning And Material Handling
- MET 14300 - Materials And Processes I
- MET 24500 - Manufacturing Systems
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership

## Other Departmental/Program Course Requirements (48-50 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- AGRY 27000 - Forest Soils
- BTNY 12000 - Principles Of Plant Biology I ♦
- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)

- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavior/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Ethics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- PHIL 11100 - Introduction To Ethics
- PHIL 28000 - Ethics And Animals
- PHIL 29000 - Environmental Ethics
- ENGL 42000 - Business Writing or
- ENGL 42100 - Technical Writing
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

## Electives (5-7 credits)

- Elective - Credit Hours: 5.00-7.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- BTNY 12000 - Principles Of Plant Biology I ♦
- CHM 11100 - General Chemistry ♦
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Oral Communication Selective - Credit Hours: 3.00

### 14-15 Credits

### Spring 1st Year

- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11200 - General Chemistry ♦
- FNR 12500 - Environmental Science And Conservation
- Written Communication Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 3.00

### 16-17 Credits

### Fall 2nd Year

- FNR 22310 - Introduction To Environmental Policy
- FNR 22500 - Dendrology
- STAT 30100 - Elementary Statistical Methods  
**Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- Humanities or Social Science Selective - Credit Hours: 3.00

### 15 Credits

### Spring 2nd Year

- AGRY 27000 - Forest Soils
- FNR 21000 - Natural Resource Information Management ♦

- FNR 35300 - Natural Resources Measurement  
**Ethics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- PHIL 11100 - Introduction To Ethics or
- PHIL 28000 - Ethics And Animals or
- PHIL 29000 - Environmental Ethics
- Humanities or Social Science Selective - Credit Hours: 3.00

## 15 Credits

### Summer Session

- FNR 37010 - Natural Resources Practicum
- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37200 - Forestry Practicum

## 6 Credits

### Fall 3rd Year

- FNR 33100 - Forest Ecosystems
- FNR 35700 - Fundamental Remote Sensing
- FNR 43400 - Tree Physiology
- Sustainable Biomaterials Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-3.00

## 13-15 Credits

### Spring 3rd Year

- FNR 31110 - Identification And Basic Properties Of Wood
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 40700 - Forest Economics
- IET 23500 - Introduction To Systems Thinking And Process Improvement
- Sustainable Biomaterials Selective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 43900 - Silviculture
- FNR 48410 - Sustainable Wood Products, Furniture Design And Manufacturing (Capstone)
- Sustainable Biomaterials Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00

## 13 Credits



## Spring 4th Year

- ENGL 42000 - Business Writing or
- ENGL 42100 - Technical Writing
- IET 31600 - Statistical Quality Control
- IET 33400 - Economic Analysis For Technology Systems
- Sustainable Biomaterials Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

15 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Forestry: Urban Forestry, BSFOR**

### About the Program

Learn to apply biological, ecological, economic and social knowledge as you develop and implement sustainable forest management plans. Studies emphasize understanding how forest ecosystems function, the role of natural and human disturbance, and ecosystem resilience. The Forestry major was recently revised to allow students to specialize in one of

four concentrations: forest management, forest science, urban forestry, and sustainable biomaterials (the latter is a technology-based degree for making products out of wood). This major prepares the student for careers with public agencies such as state divisions of forestry or the U.S. Forest Service (forest management concentration), private industry and consulting firms (urban forestry, sustainable biomaterials) and graduate school (forest science). The major is accredited by the Society of American Foresters.

Forestry Website

Forestry Major Change (CODO) Requirements

## Degree Requirements

# 124 Credits Required

## Departmental/Program Major Courses (75 credits)

### Required Major Courses (36 credits)

- FNR 12500 - Environmental Science And Conservation ♦
- FNR 21000 - Natural Resource Information Management
- FNR 22500 - Dendrology
- FNR 33100 - Forest Ecosystems
- FNR 35300 - Natural Resources Measurement
- FNR 35700 - Fundamental Remote Sensing
- FNR 37010 - Natural Resources Practicum
- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37200 - Forestry Practicum
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 40700 - Forest Economics
- FNR 43400 - Tree Physiology
- FNR 43900 - Silviculture

## Urban Forestry Concentration Courses (39 credits)

### Urban Forestry Required Courses (33 credits)

- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 23000 - The World's Forests And Society
- FNR 27000 - Landscape-Level Planning
- FNR 35500 - Quantitative Methods For Resource Management
- FNR 35910 - Spatial Ecology
- FNR 35950 - Spatial Ecology Laboratory
- FNR 40910 - Forest Resources Management
- FNR 44400 - Arboricultural Practices
- FNR 44500 - Urban Forest Issues
- FNR 58600 - Urban Ecology
- FNR 22310 - Introduction To Environmental Policy or

- POL 22300 - Introduction To Environmental Policy
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds

### Urban Forestry Concentration Selectives (6 credits)

- AGECE 33000 - Management Methods For Agricultural Business
- AGECE 33100 - Principles Of Industrial Selling
- BTNY 30100 - Introductory Plant Pathology
- ENTM 40100 - Addressing Grand Challenges Through Insect Biology
- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 31110 - Identification And Basic Properties Of Wood
- HORT 21700 - Woody Landscape Plants
- HORT 30100 - Plant Physiology
- HORT 31700 - Landscape Contracting And Management
- LA 32500 - Planting II: Ecological Landscape Performance
- LA 32600 - Landscape Architectural Design IV

### Other Departmental/Program Course Requirements (45-47 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- AGRY 27000 - Forest Soils
- BTNY 12000 - Principles Of Plant Biology I ♦
- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavior/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- **Ethics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- PHIL 11100 - Introduction To Ethics
- PHIL 28000 - Ethics And Animals
- PHIL 29000 - Environmental Ethics
- ENGL 42000 - Business Writing or
- ENGL 42100 - Technical Writing
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)

### Electives (2-4 credit)

- Electives - Credit Hours: 2.00-4.00

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- BTNY 12000 - Principles Of Plant Biology I ♦
- CHM 11100 - General Chemistry ♦
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

14-16 Credits

## Spring 1st Year

- BTNY 12100 - Principles Of Plant Biology II ♦
- CHM 11200 - General Chemistry ♦
- FNR 12500 - Environmental Science And Conservation  
**Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- Oral Communication Selective - Credit Hours: 3.00

## 16 Credits

## Fall 2nd Year

- FNR 22500 - Dendrology
- FNR 23000 - The World's Forests And Society
- STAT 30100 - Elementary Statistical Methods ♦
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles or
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds

## 13 Credits

## Spring 2nd Year

- AGRY 27000 - Forest Soils
- FNR 21000 - Natural Resource Information Management ♦
- FNR 35300 - Natural Resources Measurement  
**Ethics Selective** - Credit Hours: 3.00
- PHIL 11100 - Introduction To Ethics or
- PHIL 28000 - Ethics And Animals or
- PHIL 29000 - Environmental Ethics
- Humanities or Social Science Selective - Credit Hours: 3.00

## 15 Credits

## Summer Session

- FNR 37010 - Natural Resources Practicum
- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37200 - Forestry Practicum

## 6 Credits

## Fall 3rd Year

- FNR 33100 - Forest Ecosystems
- FNR 35700 - Fundamental Remote Sensing
- FNR 43400 - Tree Physiology
- FNR 44400 - Arboricultural Practices
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy

16 Credits

### Spring 3rd Year

- FNR 35500 - Quantitative Methods For Resource Management
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 40700 - Forest Economics
- FNR 44500 - Urban Forest Issues
- Urban Forest Selective - Credit Hours: 3.00

15 Credits

### Fall 4th Year

- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 27000 - Landscape-Level Planning
- FNR 35910 - Spatial Ecology
- FNR 35950 - Spatial Ecology Laboratory
- FNR 43900 - Silviculture
- FNR 58600 - Urban Ecology
- Elective - Credit Hours: 2.00-3.00

15-16 Credits

### Spring 4th Year

- FNR 40910 - Forest Resources Management
- ENGL 42000 - Business Writing or
- ENGL 42100 - Technical Writing
- Urban Forest Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 0.00-1.00

12-13 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Wildlife, BS

### About the Program

Learn to apply biological, ecological, economic and social knowledge as you develop and implement sustainable forest management plans. Studies emphasize understanding how forest ecosystems function, the role of natural and human disturbance, and ecosystem resilience. The Forestry major was recently revised to allow students to specialize in one of four concentrations: forest management, forest science, urban forestry, and sustainable biomaterials (the latter is a technology-based degree for making products out of wood). This major prepares the student for careers with public agencies such as state divisions of forestry or the U.S. Forest Service (forest management concentration), private industry and consulting firms (urban forestry, sustainable biomaterials) and graduate school (forest science). The major is accredited by the Society of American Foresters.

You are preparing for work in public organizations (state/federal fish and wildlife), not-for-profit organizations (The Nature Conservancy, Ducks Unlimited), private consulting firms, or for graduate studies (MS, PhD, DVM). This degree meets the educational standards of The Wildlife Society to become a Certified Wildlife Biologist.

Wildlife Website

Wildlife Major Change (CODO) Requirements



## Degree Requirements

# 120 Credits Required

### Departmental/Program Major Courses (63-64 credits)

#### Required Major Courses (55-56 credits)

- FNR 12500 - Environmental Science And Conservation (satisfies Science, Technology, and Society for core)
- FNR 21000 - Natural Resource Information Management ♦
- FNR 22500 - Dendrology
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- FNR 27000 - Landscape-Level Planning
- FNR 30500 - Conservation Genetics
- FNR 33100 - Forest Ecosystems
- FNR 34100 - Wildlife Habitat Management
- FNR 34800 - Wildlife Investigational Techniques
- FNR 35910 - Spatial Ecology
- FNR 35950 - Spatial Ecology Laboratory
- FNR 37010 - Natural Resources Practicum
- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37300 - Wildlife Practicum
- FNR 37500 - Human Dimensions of Natural Resource Management (30000+ level CoA Humanities)
- FNR 38400 - Statistics For Natural Resources
- FNR 44700 - Vertebrate Population Dynamics
- FNR 46500 - History And Role Of Hunting In North American Wildlife Conservation
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- FNR 52700 - Ecotoxicology or
- FNR 52800 - Wildlife And Environmental Forensics or
- FNR 52900 - Disease Ecology

#### Major Selectives (8 credits)

- Botany Selective - Credit Hours: 2.00
- Wildlife Selective - Credit Hours: 6.00

Wildlife Supplemental Information

#### Other Departmental /Program Course Requirements (50-52 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- AGRY 27000 - Forest Soils
- BIOL 11000 - Fundamentals Of Biology I ♦

- BIOL 28600 - Introduction To Ecology And Evolution
- BTNY 11000 - Introduction To Plant Science ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core) or
- MA 16500 - Analytic Geometry And Calculus I
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)
  - **Ethics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- PHIL 11100 - Introduction To Ethics
- PHIL 28000 - Ethics And Animals
- PHIL 29000 - Environmental Ethics
  - **Microeconomics Selective** - Credit Hours: 3.00 (satisfies Human Culture: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- ECON 25100 - Microeconomics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (4-7 credits)

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- Electives - Credit Hours: 4.00-7.00

## Supplemental List

- Wildlife Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency [website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 11900 - Introduction To Forestry And Natural Resources Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- CHM 11100 - General Chemistry ♦
- MA 16010 - Applied Calculus I or
- MA 16500 - Analytic Geometry And Calculus I
- Written Communication Selective - Credit Hours: 3.00-4.00

### 14-16 Credits

### Spring 1st Year

- BTNY 11000 - Introduction To Plant Science ♦
- CHM 11200 - General Chemistry ♦
- FNR 12500 - Environmental Science And Conservation
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- ECON 25100 - Microeconomics
- Oral Communication Selective - Credit Hours: 3.00

### 16 Credits

### Fall 2nd Year

- FNR 22500 - Dendrology
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles
- STAT 30100 - Elementary Statistical Methods ♦

- Humanities or Social Science Selective - Credit Hours: 3.00

## 13 Credits

### Spring 2nd Year

- AGRY 27000 - Forest Soils
- BIOL 28600 - Introduction To Ecology And Evolution
- FNR 21000 - Natural Resource Information Management ♦
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds
- FNR 34800 - Wildlife Investigational Techniques

## 15 Credits

### Summer Session

- FNR 37010 - Natural Resources Practicum
- FNR 37050 - Forest Habitats And Communities Practicum
- FNR 37300 - Wildlife Practicum

## 6 Credits

### Fall 3rd Year

- FNR 33100 - Forest Ecosystems
- FNR 34100 - Wildlife Habitat Management
- FNR 22310 - Introduction To Environmental Policy or
- POL 22300 - Introduction To Environmental Policy
- Humanities or Social Science Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 38400 - Statistics For Natural Resources
- Botany Selective - Credit Hours: 2.00
- Wildlife Selective - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 13-14 Credits

### Fall 4th Year

- FNR 27000 - Landscape-Level Planning
- FNR 35910 - Spatial Ecology
- FNR 35950 - Spatial Ecology Laboratory
- FNR 44700 - Vertebrate Population Dynamics
- FNR 46500 - History And Role Of Hunting In North American Wildlife Conservation
- FNR 52700 - Ecotoxicology or
- FNR 52800 - Wildlife And Environmental Forensics or
- FNR 52900 - Disease Ecology
- Elective - Credit Hours: 2.00-4.00

## 13-16 Credits

### Spring 4th Year

- FNR 30500 - Conservation Genetics
- PHIL 11100 - Introduction To Ethics or
- PHIL 28000 - Ethics And Animals or
- PHIL 29000 - Environmental Ethics
- Humanities or Social Science Selective - Credit Hours: 3.00
- Wildlife Selective - Credit Hours: 3.00

## 12 Credits

### Pre-Requisite Information

For pre-requisite information, [click here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

### Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Minor**

### **Aquatic Sciences Minor**

#### **Requirements for the Minor (16 credits)**

##### **Required Courses (7 credits)**

- FNR 20100 - Marine Biology
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles

##### **Selectives (9 credits)**

At least 6 credits from A or B Focus Area. (Additional 3 credits from either A or B Focus Area or Selective List)

##### **A. Fisheries and Aquaculture Focus**

- FNR 31300 - Aquaponics
- FNR 38500 - Fish Biology And Ecology
- FNR 45200 - Aquaculture
- FNR 45300 - Fish Physiology
- FNR 45600 - Fish And Marine Population Dynamics
- FNR 45700 - Practical Fisheries Management

##### **B. Marine and Freshwater Biology**

- EAPS 10400 - Oceanography
- FNR 37800 - Marine Biology Practicum
- FNR 40100 - Limnology
- FNR 45800 - Advanced Marine Biology

##### **Selective**

- AGRY 33700 - Environmental Hydrology
- EAPS 20000 - Water World: Processes And Challenges In Global Hydrology
- ENTM 24200 - Data Science
- ENTM 30100 - Experimentation And Analysis
- FNR 35100 - Aquatic Sampling Techniques
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 52800 - Wildlife And Environmental Forensics
- FNR 52900 - Disease Ecology

## Notes

- Departmental permission is not required to enroll in this minor.
- Other FNR 49800 or 59800 courses, with FNR approval may be used.
- For students in other FNR majors, courses required in the student's major cannot be used to meet the 9 credits of selectives for this minor.

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Digital Natural Resources Minor

The Digital Natural Resources Minor will train students in a wide-array of cutting-edge methods that leverage emerging technologies to sustainably manage our natural resources. This minor emphasizes new approaches to data acquisition (UAS-, aerial- and satellite-based platforms), analysis and novel applications in natural resources. The minor is comprised of 15 credit hours based on 4 selective lists. It is open to all majors.

### Requirements for the Minor (15 credits)

#### Data Acquisition (6 Credits)

- AGRY 54500 - Remote Sensing Of Land Resources
- AT 10901 - Introduction To Unmanned Aerial System Operations
- AT 30901 - Introduction To UAS Sensor Technology
- FNR 35700 - Fundamental Remote Sensing

#### Data Analysis (3 Credits)

- FNR 21000 - Natural Resource Information Management
- ILS 29500 - Special Topics In Information And Data Science title "Introduction to GIS"

#### Data Ethics (3 Credits)

- ILS 23000 - Data Science And Society: Ethical Legal Social Issues
- PHIL 20800 - Ethics Of Data Science

#### Data Applications (3 Credits)

- ASM 54000 - Geographic Information System Application
- FNR 35910 - Spatial Ecology
- FNR 35950 - Spatial Ecology Laboratory
- FNR 40100 - Limnology



- FNR 49800 - Special Assignments title "Environmental Sensors and Data"
- FNR 55800 - Remote Sensing Analysis And Applications

## Notes

- Departmental permission is not required to enroll in this minor.
- For students in FNR majors, courses required in the student's major cannot be used to meet more than 6 credits of selectives for this minor.
- Other courses taught under a temporary course number can be used for individual selective lists with FNR prior approval.
- ILS 29500 and FNR 49800 are currently being taught under temporary course numbers, but are in various stages of transitioning to permanent course numbers. Selective lists will be updated in the future to reflect those permanent course numbers.

## Forest Ecosystems Minor

### Requirements for the Minor (18 credits)

#### Required Courses (12 credits)

- FNR 22500 - Dendrology
- FNR 33100 - Forest Ecosystems
- FNR 33800 - Introduction To Silviculture
- FNR 35300 - Natural Resources Measurement

#### Selective Courses (6 credits)

- AGRY 27000 - Forest Soils
- BIOL 28600 - Introduction To Ecology And Evolution
- FNR 21000 - Natural Resource Information Management
- FNR 23000 - The World's Forests And Society
- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 33300 - Fire Effects In Forest Environments
- FNR 35700 - Fundamental Remote Sensing
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 40700 - Forest Economics
- FNR 43400 - Tree Physiology
- FNR 53600 - Ecology Of Disturbance
- FNR 53601 - Ecology Of Disturbance Practicum

## Notes

- Departmental permission is not required to enroll in this minor.
- Other FNR 49800 or FNR 59800 courses, with FNR approval may be used.
- For students in FNR majors, courses required in the student's major cannot be used to meet the 6 credits of selectives for this minor.

## Disclaimer

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## **Furniture Design Minor**

### Requirements for the Minor (18 credits)

#### Required Courses (12 credits)

- AD 34000 - Furniture Development
- FNR 31110 - Identification And Basic Properties Of Wood
- FNR 41910 - Furniture Product Development And Strength Design
- FNR 48410 - Sustainable Wood Products, Furniture Design And Manufacturing

#### Selective Courses (6 Credits)

- AD 21500 - Materials And Processes
- AD 22800 - Visual Communication Design Computing I
- AD 25600 - Presentation Techniques
- AD 53500 - Furniture Design
- MFET 10301 - Geometric Modeling Applications
- MET 10200 - Production Design And Specifications

## Note

- Other FNR 49800 or FNR 59800 courses, with FNR approval may be used.
- Departmental permission is not required to enroll in this minor.

## Disclaimer

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## **Urban Forestry Minor**

### Requirements for the Minor (16 credits)

## A. Required Courses (10 credits)

- FNR 44400 - Arboricultural Practices
- FNR 44500 - Urban Forest Issues
- FNR 58600 - Urban Ecology

## B. Selective Courses (6 credits)

- AGECE 33000 - Management Methods For Agricultural Business
- AGECE 33100 - Principles Of Industrial Selling
- AGRY 25500 - Soil Science
- BTNY 30100 - Introductory Plant Pathology
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 22310 - Introduction To Environmental Policy
- FNR 31110 - Identification And Basic Properties Of Wood
- FNR 33800 - Introduction To Silviculture
- FNR 35700 - Fundamental Remote Sensing
- FNR 35910 - Spatial Ecology
- FNR 35950 - Spatial Ecology Laboratory
- FNR 43400 - Tree Physiology
- HORT 21700 - Woody Landscape Plants
- HORT 31700 - Landscape Contracting And Management

## Notes

- Departmental permission is not required to enroll in this minor.
- Other FNR 49800 or 59800 courses, with FNR approval may be used.
- For students in other FNR majors, courses required in the student's major cannot be used to meet the eight credits of selectives for this minor.

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

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## **Wildlife Science Minor**

### Requirements for the Minor (17 credits)

#### Required Courses (11 credits)

- FNR 24000 - Wildlife In America
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles

- FNR 24250 - Laboratory In Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 25250 - Laboratory In Ecology And Systematics Of Mammals And Birds

## Selective Courses (6 credits)

- ANTH 23500 - The Great Apes
- ANTH 33500 - Primate Behavior
- BIOL 28600 - Introduction To Ecology And Evolution
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- BIOL 58000 - Evolution
- FNR 30500 - Conservation Genetics
- FNR 33300 - Fire Effects In Forest Environments
- FNR 35910 - Spatial Ecology
- FNR 35950 - Spatial Ecology Laboratory
- FNR 43200 - Human-Wildlife Conflicts
- FNR 46000 - International Natural Resources Summer Program
- FNR 52700 - Ecotoxicology
- FNR 52800 - Wildlife And Environmental Forensics
- FNR 52900 - Disease Ecology
- FNR 53600 - Ecology Of Disturbance
- FNR 54300 - Conservation Biology I
- FNR 56700 - Advanced Mammalogy
- FNR 57100 - Advanced Ornithology

## Notes

- Departmental permission is not required to enroll in this minor.
- Other FNR 49800 or FNR 59800 courses, with FNR approval may be used.
- For students in FNR majors, courses required in the student's major cannot be used to meet the 6 credits of selectives for this minor.

## Disclaimer

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Consultation with an advisor may result in an altered plan customized for an individual student.

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## **Wood Products Manufacturing Technology Minor**

### Requirements for the Minor (15 credits)

#### Required Courses (9 credits)

- FNR 30110 - Sustainable Wood Products Manufacturing
- FNR 31110 - Identification And Basic Properties Of Wood

- FNR 48410 - Sustainable Wood Products, Furniture Design And Manufacturing

## Selective Courses (6 credits)

- AD 49000 - Special Problems In Art And Design
- AD 53500 - Furniture Design
- FNR 41910 - Furniture Product Development And Strength Design
- MET 14300 - Materials And Processes I
- MET 24500 - Manufacturing Systems
- MFET 10301 - Geometric Modeling Applications
- IET 23500 - Introduction To Systems Thinking And Process Improvement
- IET 43530 - Operations Planning And Management
- IET 43540 - Facilities Planning And Material Handling

## Note

- Departmental permission is not required to enroll in this minor.

## Disclaimer

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The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Program Information

### Forestry Supplemental Information

#### Forest Health Selectives

- BTNY 30100 - Introductory Plant Pathology
- BTNY 52500 - Intermediate Plant Pathology
- BTNY 53500 - Plant Disease Epidemiology
- BTNY 55800 - Pathogens Of Plants
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 33300 - Fire Effects In Forest Environments

#### Forestry Selectives for Forest Management Concentration

- FNR 30500 - Conservation Genetics
- FNR 31110 - Identification And Basic Properties Of Wood
- FNR 35900 - Spatial Ecology And GIS

- FNR 44400 - Arboricultural Practices
- FNR 53500 - Forest Regeneration
- FNR 53600 - Ecology Of Disturbance
- FNR 53601 - Ecology Of Disturbance Practicum

## Forest Science Concentration Selectives

### Biometrics and Statistics

- BIOL 58210 - Ecological Statistics
- STAT 50300 - Statistical Methods For Biology
- STAT 51200 - Applied Regression Analysis
- STAT 51400 - Design Of Experiments

### Forest Ecology and Silviculture

- AGRY 34900 - Soil Ecology
- BIOL 48300 - Great Issues: Environmental And Conservation Biology
- BIOL 59100 - Field Ecology
- FNR 33300 - Fire Effects In Forest Environments
- FNR 53500 - Forest Regeneration
- FNR 53600 - Ecology Of Disturbance
- FNR 53601 - Ecology Of Disturbance Practicum
- FNR 54300 - Conservation Biology I

### Forest Geospatial Analytics

- AT 20900 - Civilian Unmanned Aerial Systems
- ASM 21600 - Introduction To Surveying
- FNR 35900 - Spatial Ecology And GIS

### Plant Biology Selectives

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 48000 - Plant Genetics
- AGRY 52000 - Principles And Methods Of Plant Breeding
- AGRY 52500 - Crop Physiology And Ecology
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 39500 - Special Assignments
- BIOL 41500 - Introduction To Molecular Biology
- BIOL 47800 - Introduction To Bioinformatics
- BTNY 30200 - Plant Ecology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 42000 - Plant Cellular And Developmental Biology
- BTNY 55200 - Molecular Approaches In Plant Biology
- CHM 25500 - Organic Chemistry For The Life Sciences I

- CHM 53300 - Introductory Biochemistry
- FNR 30500 - Conservation Genetics

## Sustainable Biomaterials Concentration Selectives (12 Credits)

- AD 49000 - Special Problems In Art And Design
- AD 53500 - Furniture Design
- AGECE 31000 - Farm Organization
- AGECE 32100 - Principles Of Commodity Marketing
- AGECE 33100 - Principles Of Industrial Selling
- CSR 30900 - Leadership Strategies
- CSR 33200 - Cross-Cultural Marketing And International Retailing
- ENTR 31000 - Marketing And Management For New Ventures
- FNR 23000 - The World's Forests And Society
- FNR 35500 - Quantitative Methods For Resource Management
- FNR 40910 - Forest Resources Management
- FNR 41910 - Furniture Product Development And Strength Design
- IET 43530 - Operations Planning And Management
- IET 43540 - Facilities Planning And Material Handling
- MET 14300 - Materials And Processes I
- MET 24500 - Manufacturing Systems
- MFET 10301 - Geometric Modeling Applications
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership

## Forestry: Forest Management Concentration Supplemental Information

### Forestry Selectives

- FNR 30500 - Conservation Genetics
- FNR 31110 - Identification And Basic Properties Of Wood
- FNR 35900 - Spatial Ecology And GIS
- FNR 44400 - Arboricultural Practices
- FNR 53500 - Forest Regeneration
- FNR 53600 - Ecology Of Disturbance
- FNR 53601 - Ecology Of Disturbance Practicum

### Forest Health Selectives

- BTNY 30100 - Introductory Plant Pathology
- BTNY 52500 - Intermediate Plant Pathology
- BTNY 53500 - Plant Disease Epidemiology
- BTNY 55800 - Pathogens Of Plants
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 41000 - Applied Insect Biology

- ENTM 41001 - Insects Of Urban Landscapes
- FNR 33300 - Fire Effects In Forest Environments

## **Wildlife Supplemental Information**

### **Botany Selective (2 Credits)**

- BTNY 30100 - Introductory Plant Pathology
- BTNY 30200 - Plant Ecology
- BTNY 30400 - Introductory Weed Science
- BTNY 30500 - Plant Evolution And Taxonomy
- FNR 43400 - Tree Physiology
- FNR 53600 - Ecology Of Disturbance
- HORT 20100 - Plant Propagation
- HORT 21810 - Flowers For Color

### **Wildlife Selective (6 Credits)**

- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 30300 - Animal Behavior
- ANSC 40400 - Animal Welfare
- ANTH 23500 - The Great Apes
- ANTH 33500 - Primate Behavior
- BTNY 30200 - Plant Ecology
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 31100 - Insect Ecology
- ENTM 33500 - Introduction To Insect Identification
- FNR 20100 - Marine Biology
- FNR 23000 - The World's Forests And Society
- FNR 33300 - Fire Effects In Forest Environments
- FNR 33900 - Principles Of Silviculture
- FNR 35100 - Aquatic Sampling Techniques
- FNR 35300 - Natural Resources Measurement
- FNR 35700 - Fundamental Remote Sensing
- FNR 37800 - Marine Biology Practicum
- FNR 38500 - Fish Biology And Ecology
- FNR 40100 - Limnology
- FNR 43200 - Human-Wildlife Conflicts
- FNR 43400 - Tree Physiology
- FNR 45200 - Aquaculture
- FNR 45300 - Fish Physiology
- FNR 45800 - Advanced Marine Biology
- FNR 46000 - International Natural Resources Summer Program
- FNR 52800 - Wildlife And Environmental Forensics
- FNR 52900 - Disease Ecology
- FNR 53600 - Ecology Of Disturbance



- FNR 53601 - Ecology Of Disturbance Practicum
- FNR 54300 - Conservation Biology I
- FNR 56700 - Advanced Mammalogy
- FNR 57100 - Advanced Ornithology
- FNR 58600 - Urban Ecology

# **Department of Horticulture and Landscape Architecture**

## **Overview**

Welcome to the Department of Horticulture and Landscape Architecture at Purdue University. The mission of the Department of Horticulture and Landscape Architecture is both education and discovery. Our faculty is committed to teaching, counseling students, and enjoys a worldwide reputation for excellence in research related to horticultural crops.

Our goal is to provide the student with the necessary technical information to be immediately successful in today's job market. Beyond that, we strive to provide students with the analytical skills necessary to interpret new information as the world of horticulture, landscape architecture, turf management and sustainable farming continues to change. In addition, our curricula are designed to provide you with communication skills, analytical skills and sensitivity to cultural diversity necessary for success in an increasingly global economy.

Upon graduation, you will leave Purdue with a wealth of knowledge and the skills for continued life-long learning. This commitment to quality education by our faculty makes the Department of Horticulture and Landscape Architecture at Purdue University one of the first places potential employers turn for employees.

## **Faculty (website)**

## **Department of Horticulture & Landscape Architecture (website)**

## **Contact Information**

Department of Horticulture & Landscape Architecture

Purdue University

Horticulture Building  
625 Agriculture Mall Dr.  
West Lafayette, IN 47907  
Phone: (765) 494-1300  
Email:hlacareers@purdue.edu

The main office for the department is located in room 207 of the HORT Building.

## **Future Undergraduate Students (website)**

## **Graduate Information**

For Graduate Information please see Horticulture and Landscape Architecture Graduate Program Information .

## **Baccalaureate**

## **Horticulture: Horticultural Production and Marketing Concentration, BS**

### About the Program

Horticultural production and marketing prepares students in the commercial production of horticultural crops and business management of horticultural enterprises. Graduates may manage greenhouses or nurseries, floral or plant shops, garden centers, orchards, vegetable farms, and farm markets. They may be involved with development, distribution, or sales of equipment, chemicals, or plant materials.

Horticulture Website

Horticulture Major Change (CODO) Requirements

### Degree Requirements

## **120 Credits Required**

### Departmental/Program Major Courses (76 credits)

#### Required Major Courses (17 credits)

- HORT 10100 - Fundamentals Of Horticulture
- HORT 20100 - Plant Propagation
- HORT 30100 - Plant Physiology
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 42700 - Horticulture Capstone

#### Horticultural Production and Marketing Concentration Required Courses (34 credits)

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 33000 - Management Methods For Agricultural Business
- AGECE 33100 - Principles Of Industrial Selling

- BTNY 30400 - Introductory Weed Science
- BTNY 35000 - Biotechnology In Agriculture
- HORT 11000 - Opportunities In Horticulture
- HORT 43500 - Developing An Agricultural Startup
- HORT 51300 - Nutrition Of Horticulture Crops
- HORT 54100 - Postharvest Technology Of Fruits And Vegetables
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core)
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting
- SFS 21000 - Small Farm Experience I or
- SFS 21100 - Small Farm Experience II
- **Entomology Selective** - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory
- OR
- ENTM 41000 - Applied Insect Biology
- and
- ENTM 41001 - Insects Of Urban Landscapes or
- ENTM 41002 - Insects Of Agricultural Crops

## Horticultural Production and Marketing Concentration Selective Courses (25 credits)

- Horticulture Production & Marketing Concentration Selectives - Credit Hours: 12.00 (see Horticulture Supplemental Information)
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 6.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Science, Technology and Society Selective - Credit Hours: 1.00 (satisfies Science, Technology and Society for core)

## Other Departmental/Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- AGRY 25500 - Soil Science ♦
- AGRY 32000 - Genetics
- BTNY 11000 - Introduction To Plant Science ♦
- BTNY 30100 - Introductory Plant Pathology ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry ♦
- **Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core) or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (7-8 credits)

- Elective - Credit Hours: 7.00-8.00

## Supplemental List

- Horticulture Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Internship/Work Experience Requirement

A minimum of 320 hours of post-high school horticulture, farming, landscaping, turf management, and/or related work experience is required for a College of Agriculture baccalaureate of science degree from the Department of Horticulture and Landscape Architecture. Summer work, intra-semester jobs, or internships can be used to satisfy this requirement. If you have questions about this requirement, contact your advisor. Contact your academic advisor to learn how to document your hours. The completed employment verification is required at least one semester before the student's intended graduation term.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)

- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency website.

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- BTNY 11000 - Introduction To Plant Science ♦
- CHM 11100 - General Chemistry ♦
- HORT 10100 - Fundamentals Of Horticulture
- Oral Communication Selective - Credit Hours: 3.00

### 14 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦
- HORT 11000 - Opportunities In Horticulture
- HORT 20100 - Plant Propagation
- MA 15800 - Precalculus - Functions And Trigonometry
- SFS 21000 - Small Farm Experience I or
- SFS 21100 - Small Farm Experience II
- Written Communication Selective - Credit Hours: 3.00-4.00

### 16-17 Credits

## Fall 2nd Year

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness
- AGRY 25500 - Soil Science ♦
- BTNY 30100 - Introductory Plant Pathology ♦
- CHM 25700 - Organic Chemistry ♦
- Science, Technology, & Society Selective - Credit Hours: 1.00
- Elective - Credit Hour: 1.00

15 Credits

## Spring 2nd Year

- HORT 30100 - Plant Physiology
- MGMT 20000 - Introductory Accounting or
- MGMT 21200 - Business Accounting  
**Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis
- Humanities or Social Sciences Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

16 Credits

## Fall 3rd Year

- AGEC 33100 - Principles Of Industrial Selling
- AGRY 32000 - Genetics
- BTNY 30400 - Introductory Weed Science
- HORT 31800 - Field Production Of Horticultural Crops  
**Entomology Selective** - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory  
OR
- ENTM 41000 - Applied Insect Biology and
- ENTM 41001 - Insects Of Urban Landscapes or
- ENTM 41002 - Insects Of Agricultural Crops

15 Credits

## Spring 3rd Year

- AGEC 33000 - Management Methods For Agricultural Business
- BTNY 35000 - Biotechnology In Agriculture
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- Humanities or Social Science Selective - Credit Hours: 3.00

- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- HORT 43500 - Developing An Agricultural Startup
- Horticulture Production & Marketing Concentration Selectives - Credit Hours: 3.00
- Horticulture Production & Marketing Concentration Selectives - Credit Hours: 3.00
- Humanities or Social Sciences Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Spring 4th Year

- HORT 42700 - Horticulture Capstone
- HORT 51300 - Nutrition Of Horticulture Crops
- HORT 54100 - Postharvest Technology Of Fruits And Vegetables
- Horticulture Production & Marketing Concentration Selectives - Credit Hours: 3.00
- Horticulture Production & Marketing Concentration Selectives - Credit Hours: 3.00
- Electives - Credit Hours: 3.00-4.00

## 12-13 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Horticulture: Landscape Contracting and Management Concentration, BS**

### About the Program

Students selecting landscape contracting and management are prepared to direct in "hands-on" fashion, the technical side of landscape construction and plant installation. Graduates of this program often operate a landscape contracting business, a design/build company or a landscape management firm, or they may work as a grounds manager.

[Horticulture Website](#)

[Horticulture Major Change \(CODO\) Requirements](#)

### Degree Requirements

## **120 Credits Required**

### Departmental/Program Major Courses (82 credits)

#### Required Major Courses (17 credits)

- HORT 10100 - Fundamentals Of Horticulture
- HORT 20100 - Plant Propagation
- HORT 30100 - Plant Physiology
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 42700 - Horticulture Capstone

#### Landscape Contracting and Management Concentration Required Courses (56 credits)

- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 33100 - Principles Of Industrial Selling
- ASM 21600 - Introduction To Surveying
- BTNY 30400 - Introductory Weed Science
- HORT 11000 - Opportunities In Horticulture
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 21700 - Woody Landscape Plants



- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- HORT 31700 - Landscape Contracting And Management
- HORT 43500 - Developing An Agricultural Startup
- LA 10110 - Survey Of Landscape Architecture
- LA 11600 - Graphic Communication In Design I
- LA 16100 - Land And Society (satisfies Science, Technology and Society for core)
- LA 21600 - Landscape Architectural Design I
- LA 24600 - Site Systems I
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core)
- SPAN 10100 - Spanish Level I (satisfies Human Cultures: Humanities for core)
- SPAN 10200 - Spanish Level II
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- **Entomology Selective** - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory
- OR
- ENTM 41000 - Applied Insect Biology and
- ENTM 41001 - Insects Of Urban Landscapes

## Landscape Contracting and Management Concentration Selective Courses (9 credits)

- Horticulture Supervision/Personnel Selective - Credit Hours: 3.00 (see Horticulture Supplemental Information)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- AGRY 25500 - Soil Science ♦
- AGRY 32000 - Genetics ♦
- BTNY 11000 - Introduction To Plant Science ♦
- BTNY 30100 - Introductory Plant Pathology ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry ♦
- **Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core) or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis

- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (1-2 credits)

- Elective - Credit Hours: 1.00-2.00

## Supplemental List

- Horticulture Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Internship/Work Experience Requirement

A minimum of 320 hours of post-high school horticulture, farming, landscaping, turf management, and/or related work experience is required for a College of Agriculture baccalaureate of science degree from the Department of Horticulture and Landscape Architecture. Summer work, intra-semester jobs, or internships can be used to satisfy this requirement. If you have questions about this requirement, contact your advisor. Contact your academic advisor to learn how to document your hours. The completed employment verification is required at least one semester before the student's intended graduation term.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)

- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency website.

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- BTNY 11000 - Introduction To Plant Science ♦
- CHM 11100 - General Chemistry ♦
- HORT 10100 - Fundamentals Of Horticulture
- Oral Communication Selective - Credit Hours: 3.00

### 14 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦
- HORT 11000 - Opportunities In Horticulture
- HORT 20100 - Plant Propagation
- MA 15800 - Precalculus - Functions And Trigonometry
- SPAN 10100 - Spanish Level I
- Written Communication Selective - Credit Hours: 3.00-4.00

## 16-17 Credits

### Fall 2nd Year

- CHM 25700 - Organic Chemistry ♦
- HORT 21700 - Woody Landscape Plants
- LA 10110 - Survey Of Landscape Architecture
- LA 11600 - Graphic Communication In Design I
- LA 16100 - Land And Society
- SPAN 10200 - Spanish Level II

## 17 Credits

### Spring 2nd Year

- AGRY 25500 - Soil Science ♦
- ASM 21600 - Introduction To Surveying ♦
- HORT 30100 - Plant Physiology
- LA 21600 - Landscape Architectural Design I  
**Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics

## 14 Credits

### Fall 3rd Year

- AGECE 33000 - Management Methods For Agricultural Business
- BTNY 30100 - Introductory Plant Pathology ♦
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- LA 24600 - Site Systems I  
**Entomology Selective** - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory  
OR
- ENTM 41000 - Applied Insect Biology and
- ENTM 41001 - Insects Of Urban Landscapes

## 16 Credits

### Spring 3rd year

- AGE3 33100 - Principles Of Industrial Selling
- AGRY 32000 - Genetics
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 31900 - Controlled Environment Production Of Horticultural Crops  
**Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis

## 15 Credits

### Fall 4th Year

- BTNY 30400 - Introductory Weed Science
- HORT 31700 - Landscape Contracting And Management
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 43500 - Developing An Agricultural Startup
- Humanities or Social Science - Credit Hours: 3.00

## 16 Credits

### Spring 4th Year

- HORT 42700 - Horticulture Capstone
- Horticulture Supervision/Personnel Selective - Credit Hours: 3.00
- Humanities or Social Science (30000+ level) Selective - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-2.00

## 11-12 Credits

### Pre-Requisite Information

For pre-requisite information, click [here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# Horticulture: Landscape Design Concentration, BS

## About the Program

Graduates in Landscape Design will be ready to create planting plans and construction site plans for landscape and garden development. They will be able to work with clients to determine requirements and oversee installation of new landscapes, especially at the small commercial/institutional and residential scales.

[Horticulture Website](#)

[Horticulture Major Change \(CODO\) Requirements](#)

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (81 credits)

### Required Major Courses (17 credits)

- HORT 10100 - Fundamentals Of Horticulture
- HORT 20100 - Plant Propagation
- HORT 30100 - Plant Physiology
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 42700 - Horticulture Capstone

### Landscape Design Concentration Required Courses (49 credits)

- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 33100 - Principles Of Industrial Selling
- HORT 11000 - Opportunities In Horticulture
- HORT 21700 - Woody Landscape Plants

- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- HORT 31700 - Landscape Contracting And Management
- HORT 43500 - Developing An Agricultural Startup
- LA 10110 - Survey Of Landscape Architecture
- LA 11600 - Graphic Communication In Design I
- LA 16100 - Land And Society (satisfies Science, Technology and Society for core)
- LA 21600 - Landscape Architectural Design I
- LA 22700 - Planting I: Creating Ecologically Connected Landscapes
- LA 24600 - Site Systems I
- LA 32500 - Planting II: Ecological Landscape Performance
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core)
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- **Entomology Selective** - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory
- OR
- ENTM 41000 - Applied Insect Biology and
- ENTM 41001 - Insects Of Urban Landscapes or
- ENTM 41002 - Insects Of Agricultural Crops

## Landscape Design Concentration Selective Courses (15 credits)

- Horticulture Supervision/Personnel Selective - Credit Hours: 3.00 (see Horticulture Supplemental Information)
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- AGRY 25500 - Soil Science ♦
- AGRY 32000 - Genetics
- BTNY 11000 - Introduction To Plant Science ♦
- BTNY 30100 - Introductory Plant Pathology ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry ♦
- **Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core) or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or

- STAT 51200 - Applied Regression Analysis
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (2-3 credits)

- Electives - Credit Hours: 2.00-3.00

## Supplemental List

- Horticulture Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Internship/Work Experience Requirement

A minimum of 320 hours of post-high school horticulture, farming, landscaping, turf management, and/or related work experience is required for a College of Agriculture baccalaureate of science degree from the Department of Horticulture and Landscape Architecture. Summer work, intra-semester jobs, or internships can be used to satisfy this requirement. If you have questions about this requirement, contact your advisor. Contact your academic advisor to learn how to document your hours. The completed employment verification is required at least one semester before the student's intended graduation term.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)



- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency website.

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- BTNY 11000 - Introduction To Plant Science ♦
- CHM 11100 - General Chemistry ♦
- HORT 10100 - Fundamentals Of Horticulture
- Oral Communication Selective - Credit Hours: 3.00

### 14 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦
- HORT 11000 - Opportunities In Horticulture
- HORT 20100 - Plant Propagation
- MA 15800 - Precalculus - Functions And Trigonometry
- Human Cultures: Humanities Selective - Credit Hours: 3.00

- Written Communication Selective - Credit Hours: 3.00-4.00

## 16-17 Credits

### Fall 2nd Year

- CHM 25700 - Organic Chemistry ♦
- HORT 21700 - Woody Landscape Plants
- LA 11600 - Graphic Communication In Design I
- LA 16100 - Land And Society
- LA 10110 - Survey Of Landscape Architecture

## 14 Credits

### Spring 2nd Year

- AGRY 25500 - Soil Science ♦
- HORT 30100 - Plant Physiology
- LA 21600 - Landscape Architectural Design I  
**Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Humanities or Social Science Selective - Credit Hours: 3.00

## 16 Credits

### Fall 3rd Year

- AGECE 33000 - Management Methods For Agricultural Business
- BTNY 30100 - Introductory Plant Pathology ♦
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- LA 24600 - Site Systems I
- Humanities or Social Sciences Selective - Credit Hours: 3.00

## 16 Credits

### Spring 3rd Year

- AGECE 33100 - Principles Of Industrial Selling
- AGRY 32000 - Genetics
- LA 22700 - Planting I: Creating Ecologically Connected Landscapes  
**Statistics Selective** - Credit Hours: 3.00

- STAT 30100 - Elementary Statistical Methods or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis  
**Entomology Selective** - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory  
OR
- ENTM 41000 - Applied Insect Biology and
- ENTM 41001 - Insects Of Urban Landscapes or
- ENTM 41002 - Insects Of Agricultural Crops

## 15 Credits

### Fall 4th Year

- HORT 31700 - Landscape Contracting And Management
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 43500 - Developing An Agricultural Startup
- LA 32500 - Planting II: Ecological Landscape Performance
- Written or Oral Communication (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Spring 4th Year

- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 42700 - Horticulture Capstone
- Horticulture Supervision/Personnel Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Elective - Credit Hours: 2.00-3.00

## 12-13 Credits

### Pre-Requisite Information

For pre-requisite information, click [here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

# Horticulture: Landscape Enterprise Management Concentration, BS

## About the Program

In addition to their science-based landscape horticultural skills, students selecting landscape enterprise management are prepared to become account managers in client relations, business managers, as well as supervisors for landscape installation projects and landscape management.

[Horticulture Website](#)

[Horticulture Major Change \(CODO\) Requirements](#)

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (77 credits)

### Required Major Courses (17 credits)

- HORT 10100 - Fundamentals Of Horticulture
- HORT 20100 - Plant Propagation
- HORT 30100 - Plant Physiology
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 42700 - Horticulture Capstone

### Required Concentration Courses (36 credits)

- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Culture Behavioral/Social Science for core)
- AGEC 33000 - Management Methods For Agricultural Business
- AGEC 33100 - Principles Of Industrial Selling
- HORT 11000 - Opportunities In Horticulture
- HORT 21700 - Woody Landscape Plants
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- HORT 31700 - Landscape Contracting And Management
- HORT 43500 - Developing An Agricultural Startup
- LA 10110 - Survey Of Landscape Architecture
- LA 16100 - Land And Society (satisfies Science, Technology & Society Selective for core)
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core)
- MGMT 21200 - Business Accounting
- **Entomology Selective** - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory
- OR
- ENTM 41000 - Applied Insect Biology and
- ENTM 41001 - Insects Of Urban Landscapes or
- ENTM 41002 - Insects Of Agricultural Crops

## Landscape Enterprise Management Concentration Selectives (24 credits)

- Horticulture Business/Supervision/Personnel Selective - Credit Hours: 12.00 (see Horticulture Supplemental Information)
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- AGRY 25500 - Soil Science ♦
- AGRY 32000 - Genetics
- BTNY 11000 - Introduction To Plant Science ♦
- BTNY 30100 - Introductory Plant Pathology ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry ♦
- **Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core) or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (6-7 credits)

- Elective - Credit Hours: 6.00-7.00

## Supplemental List

- Horticulture Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Internship/Work Experience Requirement

A minimum of 320 hours of post-high school horticulture, farming, landscaping, turf management, and/or related work experience is required for a College of Agriculture baccalaureate of science degree from the Department of Horticulture and Landscape Architecture. Summer work, intra-semester jobs, or internships can be used to satisfy this requirement. If you have questions about this requirement, contact your advisor. Contact your academic advisor to learn how to document your hours. The completed employment verification is required at least one semester before the student's intended graduation term.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency [website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Additional Information

*Any additional information that does not fit into any of the categories above.*

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- BTNY 11000 - Introduction To Plant Science ♦
- CHM 11100 - General Chemistry ♦
- HORT 10100 - Fundamentals Of Horticulture
- Oral Communication Selective - Credit Hours: 3.00

14 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦
- HORT 11000 - Opportunities In Horticulture
- HORT 20100 - Plant Propagation
- MA 15800 - Precalculus - Functions And Trigonometry
- Written Communication Selective - Credit Hours: 3.00-4.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

16-17 Credits

### Fall 2nd Year

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- CHM 25700 - Organic Chemistry ♦
- HORT 21700 - Woody Landscape Plants
- LA 10110 - Survey Of Landscape Architecture
- LA 16100 - Land And Society

14 Credits

### Spring 2nd Year

- AGECE 33000 - Management Methods For Agricultural Business
- AGRY 25500 - Soil Science ♦
- HORT 30100 - Plant Physiology
- Horticulture Business/Supervision/Personnel Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective - Credit Hours: 3.00



## 16 Credits

### Fall 3rd Year

- AGEC 33100 - Principles Of Industrial Selling
- BTNY 30100 - Introductory Plant Pathology ♦
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- Horticulture Business/Supervision/Personnel Selective - Credit Hours: 3.00  
**Entomology Selective** - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory  
OR
- ENTM 41000 - Applied Insect Biology and
- ENTM 41001 - Insects Of Urban Landscapes or
- ENTM 41002 - Insects Of Agricultural Crops

## 15 Credits

### Spring 3rd Year

- AGRY 32000 - Genetics
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- MGMT 21200 - Business Accounting  
**Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis
- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- HORT 31700 - Landscape Contracting And Management
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 43500 - Developing An Agricultural Startup
- Humanities or Social Sciences Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00-4.00

## 16-17 Credits

### Spring 4th Year

- HORT 42700 - Horticulture Capstone
- Horticulture Business/Supervision/Personnel Selective - Credit Hours: 3.00

- Horticulture Business/Supervision/Personnel Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 13 Credits

## Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Horticulture: Plant Science Concentration, BS**

### About the Program

Plant Science includes training to improve plants through genetic manipulation and to investigate new methods of propagation, growth, handling, and marketing of horticultural crops. Horticultural scientists work at colleges and universities, state and federal experiment stations, and public or private laboratories and foundations. This curriculum prepares students for scientifically oriented careers such as technicians in plant breeding, propagation, and research industries. It is an excellent preparatory program for students planning to pursue post-graduate study toward a Masters or PhD degree.

Horticulture Website

## Degree Requirements

# 120 Credits Required

## Departmental/Program Major Courses (73-74 credits)

### Required Major Courses (17 credits)

- HORT 10100 - Fundamentals Of Horticulture
- HORT 20100 - Plant Propagation
- HORT 30100 - Plant Physiology
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 42700 - Horticulture Capstone

### Plant Science Concentration Required Courses (29-30 credits)

- AGRY 32100 - Genetics Laboratory
- BCHM 30700 - Biochemistry ♦
- BTNY 26200 - Plant Structure And Tissue Biology ♦
- BTNY 30200 - Plant Ecology ♦
- BTNY 30500 - Plant Evolution And Taxonomy ♦
- CHM 25701 - Organic Chemistry Laboratory ♦
- HORT 12100 - Medicine In The Garden (satisfies Science, Technology and Society for core)
- HORT 49100 - Special Assignments In Horticulture - must take for 3.00 credits
- HORT 51300 - Nutrition Of Horticulture Crops
- HORT 54100 - Postharvest Technology Of Fruits And Vegetables
- MA 16010 - Applied Calculus I (satisfies Quantitative Reasoning for core)
  - **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
  - **Physics Selective** - Credit Hours: 3.00-4.00
- PHYS 17200 - Modern Mechanics
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics

### Plant Science Concentration Selective Courses (27 credits)

- Plant Science Concentration Selective - Credit Hours: 15.00 (see Horticulture Supplemental Information)
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)

- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00

## Other Departmental/Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- AGRY 25500 - Soil Science ♦
- AGRY 32000 - Genetics ♦
- BTNY 11000 - Introduction To Plant Science ♦
- BTNY 30100 - Introductory Plant Pathology ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry ♦
- **Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core) or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## Electives (9-11 credits)

- Elective - Credit Hours: 9.00-11.00

## Supplemental List

- Horticulture Supplemental Information

## Internship/Work Experience Requirement

A minimum of 320 hours of post-high school horticulture, farming, landscaping, turf management, and/or related work experience is required for a College of Agriculture baccalaureate of science degree from the Department of Horticulture and Landscape Architecture. Summer work, intra-semester jobs, or internships can be used to satisfy this requirement. If you have questions about this requirement, contact your advisor. Contact your academic advisor to learn how to document your hours. The completed employment verification is required at least one semester before the student's intended graduation term.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency website.

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Additional Information

*Any additional information that does not fit into any of the categories above.*

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- BTNY 11000 - Introduction To Plant Science
- CHM 11100 - General Chemistry ♦
- HORT 12100 - Medicine In The Garden
- MA 16010 - Applied Calculus I
- Oral Communication Selective - Credit Hours: 3.00

### 15 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦
- HORT 10100 - Fundamentals Of Horticulture  
**Economics Selective** - Credit Hours: 3.00
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or

- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Written Communication Selective - Credit Hours: 3.00-4.00
- Elective - Credit Hours: 3.00

## 15-16 Credits

### Fall 2nd Year

- AGRY 25500 - Soil Science ♦
- BTNY 26200 - Plant Structure And Tissue Biology ♦
- CHM 25700 - Organic Chemistry ♦
- CHM 25701 - Organic Chemistry Laboratory ♦
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 14 Credits

### Spring 2nd Year

- BCHM 30700 - Biochemistry ♦
- BTNY 30200 - Plant Ecology ♦
- HORT 20100 - Plant Propagation
- HORT 30100 - Plant Physiology
- Elective - Credit Hours: 3.00

## 16 Credits

### Fall 3rd Year

- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- BTNY 30100 - Introductory Plant Pathology ♦
- BTNY 30500 - Plant Evolution And Taxonomy ♦
- HORT 31800 - Field Production Of Horticultural Crops
- Humanities or Social Science Selective - Credit Hours: 3.00

## 16 Credits

### Spring 3rd Year

- HORT 31900 - Controlled Environment Production Of Horticultural Crops  
**Physics Selective** - Credit Hours: 3.00-4.00
- PHYS 17200 - Modern Mechanics or
- PHYS 21400 - The Nature Of Physics or
- PHYS 22000 - General Physics or
- PHYS 22100 - General Physics  
**Statistics Selective** - Credit Hours: 3.00

- STAT 30100 - Elementary Statistical Methods or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis
- Plant Science Concentration Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective - Credit Hours: 3.00

## 15-16 Credits

### Fall 4th Year

- HORT 49100 - Special Assignments In Horticulture - must take for 3.00 credits
- Plant Science Concentration Selective - Credit Hours: 3.00
- Plant Science Concentration Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communication Selective (20000+ level)- Credit Hours: 3.00

## 15 Credits

### Spring 4th Year

- HORT 42700 - Horticulture Capstone
- HORT 51300 - Nutrition Of Horticulture Crops
- HORT 54100 - Postharvest Technology Of Fruits And Vegetables
- Plant Science Concentration Selective - Credit Hours: 3.00
- Plant Science Concentration Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00-5.00

## 12-14 Credits

### Pre-Requisite Information

For pre-requisite information, click [here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.



In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Horticulture: Public Horticulture Concentration, BS

### About the Program

Public horticulture is a professional program leading to employment in botanical gardens and arboretums and other horticultural establishments serving the public. Graduates work as curators of plant collections, educators, plant propagators, illustrators, and writers. Practical training through internships in public gardens is stressed.

Horticulture Website

Horticulture Major Change (CODO) Requirements

### Degree Requirements

## 120 Credits Required

### Departmental/Program Major Courses (76 credits)

#### Required Major Courses (17 credits)

- HORT 10100 - Fundamentals Of Horticulture
- HORT 20100 - Plant Propagation
- HORT 30100 - Plant Physiology
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 42700 - Horticulture Capstone

#### Public Horticulture Concentration Required Courses (38 credits)

- BCHM 30700 - Biochemistry ♦
- BTNY 30200 - Plant Ecology ♦
- BTNY 30500 - Plant Evolution And Taxonomy ♦
- HORT 11000 - Opportunities In Horticulture

- HORT 21700 - Woody Landscape Plants
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- HORT 30600 - History Of Horticulture
- HORT 31700 - Landscape Contracting And Management
- LA 10110 - Survey Of Landscape Architecture
- LA 16100 - Land And Society (satisfies Science, Technology and Society for core)
- LA 16600 - History And Theory Of Landscape Architecture
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core)
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Sciences for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics
- ECON 25200 - Macroeconomics
- Entomology Selective - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory
- OR
- ENTM 41000 - Applied Insect Biology  
and
- ENTM 41001 - Insects Of Urban Landscapes or
- ENTM 41002 - Insects Of Agricultural Crops

## Public Horticulture Concentration Selective Courses (21 credits)

- Public Horticulture Concentration Selectives - Credit Hours: 6.00 (see Horticulture Supplemental Information )
- Horticulture Communications Selective - Credit Hours: 3.00
- Horticulture Supervision/Personnel Selective - Credit Hours: 3.00
- Human Cultures Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00

## Other Departmental /Program Course Requirements (36-37 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- AGRY 25500 - Soil Science ♦
- AGRY 32000 - Genetics
- BTNY 11000 - Introduction To Plant Science
- BTNY 30100 - Introductory Plant Pathology ♦
- CHM 11100 - General Chemistry ♦ (satisfies Science #1 for core)
- CHM 11200 - General Chemistry ♦ (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry ♦
- **Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core) or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis

- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communication Selective (20000+ level)- Credit Hours: 3.00

## Electives (7-8 credits)

- Elective - Credit Hours: 7.00-8.00

## Supplemental List

- Horticulture Supplemental Information

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Public Horticulture Internship/Work Experience Requirement

A minimum of 800 hours of post-high school, public horticulture-related internship experience is required. Public Horticulture is a professional program leading to employment in botanical gardens, arboretums, and other horticulture establishments in the public sector, as curators of plant collections, educators, plant propagators, illustrators, and writers. Summer or intra-semester internships can be used to satisfy this requirement. Contact your academic advisor with any questions about this requirement. Contact your academic advisor to learn how to document your hours. The completed employment verification is required at least one semester before the student's intended graduation term.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- BTNY 11000 - Introduction To Plant Science
- CHM 11100 - General Chemistry ♦
- HORT 10100 - Fundamentals Of Horticulture
- Oral Communication Selective - Credit Hours: 3.00

### 14 Credits

### Spring 1st Year

- CHM 11200 - General Chemistry ♦
- HORT 11000 - Opportunities In Horticulture
- HORT 20100 - Plant Propagation
- MA 15800 - Precalculus - Functions And Trigonometry
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00-4.00

### 16-17 Credits

### Fall 2nd Year

- AGRY 25500 - Soil Science ♦
- CHM 25700 - Organic Chemistry ♦
- HORT 21700 - Woody Landscape Plants
- LA 10110 - Survey Of Landscape Architecture
- LA 16100 - Land And Society
- Elective - Credit Hours: 1.00

### 15 Credits

### Spring 2nd Year

- BCHM 30700 - Biochemistry ♦
- HORT 30100 - Plant Physiology
- LA 16600 - History And Theory Of Landscape Architecture  
**Economics Selective** - Credit Hours: 3.00

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
- AGECE 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- **Entomology Selective** - Credit Hours: 3.00
- ENTM 20600 - General Entomology and
- ENTM 20700 - General Entomology Laboratory  
OR
- ENTM 41000 - Applied Insect Biology  
and
- ENTM 41001 - Insects Of Urban Landscapes or
- ENTM 41002 - Insects Of Agricultural Crops

## 16 Credits

### Fall 3rd Year

- AGRY 32000 - Genetics
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30500 - Plant Evolution And Taxonomy ♦
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- **Statistics Selective** - Credit Hours: 3.00
- STAT 30100 - Elementary Statistical Methods or
- STAT 50300 - Statistical Methods For Biology or
- STAT 51100 - Statistical Methods or
- STAT 51200 - Applied Regression Analysis

## 15 Credits

### Spring 3rd Year

- BTNY 30200 - Plant Ecology ♦
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- Public Horticulture Concentration Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Fall 4th Year

- HORT 30600 - History Of Horticulture
- HORT 31700 - Landscape Contracting And Management
- HORT 31800 - Field Production Of Horticultural Crops
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

- Elective - Credit Hours: 2.00

## 14 Credits

### Spring 4th Year

- HORT 42700 - Horticulture Capstone
- Horticulture Communication Selective - Credit Hours: 3.00
- Horticulture Supervision/Personnel Selective - Credit Hours: 3.00
- Public Horticulture Concentration Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-2.00

## 14-15 Credits

### Pre-Requisite Information

For pre-requisite information, click [here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

### Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## Landscape Architecture, BSLA

## About the Program

Landscape architecture allows students to develop abilities in problem solving, analytical thinking, and communication. Three fundamental tracks run through the curriculum - design, technical, and plant materials. First-year students enter the pre-landscape architecture program and learn basic art, graphic communication, and design skills. Based on performance in their first year, qualified students are admitted into the professional landscape architecture program. In their second year, increasingly challenging projects allow students to apply their knowledge. Third-year students complete larger-scale projects and focus on more diverse and technically difficult concepts. Between the third and fourth years, students complete a co-op program wherein students are placed in professional offices nationwide for a minimum of forty weeks. Fourth year students focus on "real-client" projects in urban and regional design.

Landscape Architecture Website

Horticulture Major Change (CODO) Requirements

## Degree Requirements

### **120 Credits Required**

#### Departmental/Program Major Courses (60 credits)

##### Required Major Courses (60 credits)

- LA 10110 - Survey Of Landscape Architecture
- LA 11600 - Graphic Communication In Design I
- LA 11700 - Graphic Communication In Design II
- LA 16100 - Land And Society (satisfies Science, Technology, & Society for core)
- LA 16600 - History And Theory Of Landscape Architecture
- LA 21600 - Landscape Architectural Design I
- LA 22600 - Landscape Architectural Design II
- LA 22700 - Planting I: Creating Ecologically Connected Landscapes
- LA 24600 - Site Systems I
- LA 30900 - Co-Op Preparation
- LA 31600 - Landscape Architectural Design III
- LA 32500 - Planting II: Ecological Landscape Performance
- LA 32600 - Landscape Architectural Design IV
- LA 34600 - Site Systems II
- LA 35600 - Site Systems III
- LA 39000 - Professional Cooperative Programs In Landscape Architecture
- LA 41600 - Landscape Architectural Design V
- LA 42600 - Capstone Course In Landscape Architecture
- LA 47600 - Professional Practice Of Landscape Architecture
- LA 48200 - Contemporary Issues In Landscape Architecture
- LA 50100 - Research Methods For Design Applications
- Landscape Architecture Selectives - Credit Hours: 2.00

#### Other Departmental/Program Course Requirements (53-54 credits)



- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
  - AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
  - ASM 21600 - Introduction To Surveying
  - BIOL 11000 - Fundamentals Of Biology I ♦
  - HORT 21700 - Woody Landscape Plants
  - HORT 31700 - Landscape Contracting And Management
  - MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning Selective for core)
  - AGRY 12500 - Environmental Science And Conservation ♦ or
  - EAPS 12500 - Environmental Science And Conservation ♦ or
  - FNR 12500 - Environmental Science And Conservation ♦ or
  - NRES 12500 - Environmental Science And Conservation ♦
  - BIOL 11100 - Fundamentals Of Biology II ♦ or
  - BTNY 11000 - Introduction To Plant Science ♦
- Written Communication Selective** - Credit Hours: 3.00-4.00 (satisfies Written Communication and Information Literacy for core)
- ENGL 10600 - First-Year Composition ♦ or
  - ENGL 10800 - Accelerated First-Year Composition ♦
- Oral Communication Selectives** - Credit Hours: 3.00 (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication or
  - COM 21700 - Science Writing And Presentation or
  - EDPS 31500 - Collaborative Leadership: Interpersonal Skills or
  - SCLA 10200 - Transformative Texts, Critical Thinking And Communication II: Modern World
- Economics Selective** - Credit Hours: 3.00 (satisfies Human Culture Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
  - AGECE 20400 - Introduction To Resource Economics And Environmental Policy or
  - AGECE 21700 - Economics or
  - ECON 21000 - Principles Of Economics or
  - ECON 25100 - Microeconomics or
  - ECON 25200 - Macroeconomics
  - Art & Design Selective - Credit Hours: 3.00
  - Art & Design Selective - Credit Hours: 3.00
  - Mathematics or Sciences Selective - Credit Hours: 3.00
  - Human Cultures: Humanities Selective - Credit Hours: 3.00
  - Humanities or Social Science Selective - Credit Hours: 3.00
  - Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
  - Written or Oral Communications Selection (20000+ level) - Credit Hours: 3.00

## Electives (6-7 credits)

- Electives - Credit Hours: 6.00-7.00

## Supplemental List

[Click here for Landscape Architecture Supplemental Information](#)

## Grade Requirements

*Clearly list any/all grade requirements within the program.*

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

- \*\* Students in Landscape Architecture fulfill the foundational mathematics requirement by (1) completing MA 15800 or higher or (2) completing STAT 30100. Enrolling in STAT 30100 requires either successfully completing MA 15300 and MA 15400 or taking the advanced credit examination for MA 15300 and MA 15400 to establish competency. Three (3) credits of MA 15300 or MA 15400 may be used as an unrestricted elective in the College of Agriculture Undergraduate plans of study, but may not be used as Mathematics and Sciences selective.

## Non-course / Non-credit Requirements

### **Change of Option from Pre-landscape Architecture to the Professional Landscape Architecture Program**

- Pre-landscape architecture students, who wish to continue into the landscape architecture professional program, or transfer students from other institutions, must qualify by meeting the following criteria, or through further assessment as described below:
  - 1. Overall GPA - The student must be in good academic standing. A minimum overall GPA of 2.5 across all Purdue and transferred credit coursework is necessary for acceptance into the landscape architecture professional program.
  - 2. Grade point average of 3.0 or higher in all landscape architecture prefixed courses taken (LA Index).
  - 3. Completion of LA 10600; or 11600 and 21600; or approved equivalent, and a minimum of 24 credit hours of Purdue accepted college level coursework are the minimum necessary for acceptance into the landscape architecture professional program.

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency [website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.

- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Additional Information

*Any additional information that does not fit into any of the categories above.*

## Sample 4-Year Plan

### Fall 1st Year (Pre-Program)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- BIOL 11000 - Fundamentals Of Biology I ♦
- LA 10110 - Survey Of Landscape Architecture
- LA 11600 - Graphic Communication In Design I
- LA 16100 - Land And Society
- ENGL 10600 - First-Year Composition ♦ or
- ENGL 10800 - Accelerated First-Year Composition ♦

### 14-15 Credits

### Spring 1st Year (Pre-Program)

- LA 21600 - Landscape Architectural Design I
- MA 15800 - Precalculus - Functions And Trigonometry
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 11000 - Introduction To Plant Science ♦
- COM 11400 - Fundamentals Of Speech Communication or
- COM 21700 - Science Writing And Presentation or
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills or
- SCLA 10200 - Transformative Texts, Critical Thinking And Communication II: Modern World
- Art and Design Selective - Credit Hours: 3.00

### 16 Credits

### Fall 2nd Year

- HORT 21700 - Woody Landscape Plants
- LA 11700 - Graphic Communication In Design II
- LA 24600 - Site Systems I
- AGRY 12500 - Environmental Science And Conservation ♦ or
- EAPS 12500 - Environmental Science And Conservation ♦ or
- FNR 12500 - Environmental Science And Conservation ♦ or
- NRES 12500 - Environmental Science And Conservation ♦
- Elective - Credit Hours: 1.00

## 15 Credits

### Spring 2nd Year

- ASM 21600 - Introduction To Surveying
- LA 16600 - History And Theory Of Landscape Architecture
- LA 22600 - Landscape Architectural Design II
- LA 22700 - Planting I: Creating Ecologically Connected Landscapes
- LA 34600 - Site Systems II
- Landscape Architecture Selective - Credit Hours: 1.00

## 15 Credits

### Fall 3rd Year

- HORT 31700 - Landscape Contracting And Management
- LA 30900 - Co-Op Preparation
- LA 31600 - Landscape Architectural Design III
- LA 32500 - Planting II: Ecological Landscape Performance
- Art & Design Selective - Credit Hours: 3.00

## 14 Credits

### Spring 3rd Year

- LA 32600 - Landscape Architectural Design IV
- LA 35600 - Site Systems III
- **Economics Selective** - Credit Hours: 3.00
- AGEC 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGEC 20400 - Introduction To Resource Economics And Environmental Policy or
- AGEC 21700 - Economics or
- ECON 21000 - Principles Of Economics or
- ECON 25100 - Microeconomics or
- ECON 25200 - Macroeconomics
- Landscape Architecture Selective - Credit Hours: 1.00
- Elective - Credit Hours: 4.00

## 16 Credits

### Fall & Spring 4th Year

- LA 39000 - Professional Cooperative Programs In Landscape Architecture

### Fall 5th Year

- LA 41600 - Landscape Architectural Design V
- LA 47600 - Professional Practice Of Landscape Architecture

- LA 50100 - Research Methods For Design Applications
- Humanities or Social Sciences Selective (30000+ level) - Credit Hours: 3.00
- Written or Oral Communications Selection (20000+ level) - Credit Hours: 3.00
- Mathematics or Sciences Selective - Credit Hours: 3.00

## 16 Credits

### Spring 5th Year

- LA 42600 - Capstone Course In Landscape Architecture
- LA 48200 - Contemporary Issues In Landscape Architecture
- Humanities or Social Sciences Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 1.00-2.00

## 13-14 Credits

### Pre-Requisite Information

For pre-requisite information, [click here](#).

### World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

### Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

### Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Sustainable Food and Farming Systems, BS**

## About the Program

Learn how to design and manage a small farm enterprise. Study the principles of sustainable agriculture including non-chemical pest and soil management. Investigate organic, local, and urban agriculture systems and study the resilience of the American food system. Gain hands-on experience at the new Purdue University student farm. This is a comprehensive, science-based degree program that will prepare you to manage low-input farming enterprises and for a career in many other agricultural and environmental professional fields.

[Sustainable Food and Farming Systems Website](#)

[Sustainable Food and Farming Systems Major Change \(CODO\) Requirements](#)

## Degree Requirements

### **120 Credits Required**

#### Departmental/Program Major Courses (28 credits)

#### Required Major Courses (13 credits)

- SFS 21000 - Small Farm Experience I ♦
- SFS 21100 - Small Farm Experience II ♦
- SFS 30100 - Agroecology
- SFS 30200 - Principles Of Sustainability
- SFS 35100 - SFS Capstone Project

#### Major Selectives (15 credits)

(see Supplemental Information for lists of courses)

Ecology/Environment Selective - Credit Hours: 3.00

Pest Management Selectives - Credit Hours: 6.00

Systems Modules Selective - Credit Hours: 6.00

#### Other Departmental/Program Course Requirements (70-71 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- AGRY 25500 - Soil Science
- AGRY 32000 - Genetics
- AGECEC 20300 - Introductory Microeconomics For Food And Agribusiness (satisfies Human Culture Behavioral/Social Science for core) or
- AGECEC 20400 - Introduction To Resource Economics And Environmental Policy (satisfies Human Culture Behavioral/Social Science for core)

- ANSC 10200 - Introduction To Animal Agriculture (satisfies Science, Technology, and Society for core) or
- ANSC 24000 - Principles Of Animal Production (DOES NOT satisfies Science, Technology, and Society for core)

**Biological Selective I and II - (Choose 2 of the 3 courses) Credit Hours: 8.00**

- BIOL 11000 - Fundamentals Of Biology I
- BTNY 11000 - Introduction To Plant Science
- BTNY 12000 - Principles Of Plant Biology I
- BTNY 20700 - The Microbial World or
- BIOL 22100 - Introduction To Microbiology
- CHM 11100 - General Chemistry (satisfies Science #1 for core)
- CHM 11200 - General Chemistry (satisfies Science #2 for core)
- HORT 10100 - Fundamentals Of Horticulture
- HORT 43500 - Developing An Agricultural Startup
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core)
- SFS 48500 - Environmental Communication
- STAT 30100 - Elementary Statistical Methods ♦ (satisfies Information Literacy for core)

Horticulture Selective - Credit Hours: 3.00

- HORT 20100 - Plant Propagation
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops

Soil Science Selective - Credit Hours: 3.00

- AGRY 34900 - Soil Ecology
- AGRY 36500 - Soil Fertility
- AGRY 45000 - Soil Conservation and Water Management
- AGRY 56500 - Soils And Landscapes
- AGRY 58000 - Soil Microbiology
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Written Communication Selective - Credit Hours: 3.00 (satisfies Written Communication for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)

## Electives (21-22 credits)

- Elective - Credit Hours: 21.00-22.00

## Supplemental List

- Sustainable Food & Farming Systems Supplemental Information

## Grade Requirements

*Clearly list any/all grade requirements within the program.*

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.



## Course Requirements and Notes

*Double-counting policy - where is it allowed and not allowed; specific notes or requirements about courses; repeatable limits, study abroad, etc.*

## Non-course / Non-credit Requirements

*Degree requirements which are not associated to a course. For example: portfolio, work experience, certifications. Should equal 0 credits.*

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

# University Requirements

## University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

## Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the [Civics Literacy Proficiency website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

## Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Additional Information

*Any additional information that does not fit into any of the categories above.*

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- **Biological Selective I** (Choose one) - Credit Hours: 4.00

- BIOL 11000 - Fundamentals Of Biology I
- BTNY 11000 - Introduction To Plant Science
- BTNY 12000 - Principles Of Plant Biology I
- CHM 11100 - General Chemistry
- MA 15800 - Precalculus - Functions And Trigonometry
- Oral Communication Selective - Credit Hours: 3.00

## 14 Credits

### Spring 1st Year

#### **Biological Selective II - (Choose one) Credit Hours: 4.00**

- BIOL 11000 - Fundamentals Of Biology I
- BTNY 11000 - Introduction To Plant Science
- BTNY 12000 - Principles Of Plant Biology I
- CHM 11200 - General Chemistry
- HORT 10100 - Fundamentals Of Horticulture
- SFS 21000 - Small Farm Experience I ♦
- Written Communication Selective - Credit Hours: 3.00-4.00

## 16-17 Credits

### Fall 2nd Year

- ANSC 10200 - Introduction To Animal Agriculture or
- ANSC 24000 - Principles Of Animal Production
- SFS 21100 - Small Farm Experience II ♦
- SFS 30100 - Agroecology
- Systems Modules Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 15 Credits

### Spring 2nd Year

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness or
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGRY 25500 - Soil Science
- SFS 30200 - Principles Of Sustainability
- BTNY 20700 - The Microbial World or
- Systems Modules Selective - Credit Hours: 3.00
- BIOL 22100 - Introduction To Microbiology

## 15-16 Credits

### Fall 3rd Year

- SFS 48500 - Environmental Communication
- Human Cultures: Humanities Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- Pest Management Selective - Credit Hours: 3.00
- **Soil Science Selective** (Choose one) - Credit Hours: 3.00
- AGRY 34900 - Soil Ecology
- AGRY 36500 - Soil Fertility
- AGRY 45000 - Soil Conservation and Water Management
- AGRY 56500 - Soils And Landscapes
- AGRY 58000 - Soil Microbiology

15 Credits

### Spring 3rd Year

- AGRY 32000 - Genetics
- STAT 30100 - Elementary Statistical Methods
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00
- **Horticulture Selective** (Choose one) - Credit Hours: 3.00
- HORT 20100 - Plant Propagation
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops

15 Credits

### Fall 4th Year

- HORT 43500 - Developing An Agricultural Startup
- SFS 35100 - SFS Capstone Project
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Pest Management Selective - Credit Hours: 3.00
- Elective - Credit Hours: 5.00

16 Credits

### Spring 4th Year

- Ecology/Environment Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Elective - Credit Hours: 7.00-8.00

13-14 Credits

### Pre-Requisite Information

For pre-requisite information, click [here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

The student is ultimately responsible for knowing and completing all degree requirements.

Consultation with an advisor may result in an altered plan customized for an individual student.

The myPurduePlan powered by DegreeWorks is the knowledge source for specific requirements and completion.

## **Turf Management and Science, BS**

### About the Program

This major is for students interested in a career as a professional turf manager. A turf manager oversees and implements cultural management programs for the maintenance, production, conditioning and performance of a wide variety of turf areas like lawns, athletic fields, golf courses, parks, and sod farms. Managing a visually pleasing and manicured turf that is subject to intense use requires a foundation of technical expertise, the ability to make precise management decisions and a wealth of practical experience. The Turf Science and Management curriculum is based in scientific principles, while also providing the technical information, business/management, written/oral communication, and problem solving coursework and skills to promote managerial success. This Bachelor of Science degree broadly prepares students to handle a wide array of potential career paths in the Turf Industry.

[Turf Management and Science Website](#)

[Turf Management and Science Major Change \(CODO\) Requirements](#)

### Degree Requirements

## **120 Credits Required**

## Departmental/Program Major Courses (40 credits)

### Required Major Courses (19 credits)

- HORT 10100 - Fundamentals Of Horticulture
- HORT 11000 - Opportunities In Horticulture
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 21100 - Fundamentals Of Turfgrass Culture Laboratory
- HORT 30100 - Plant Physiology
- AGRY 51000 - Turfgrass Science
- AGRY 51200 - Integrated Turfgrass Systems
- AGRY 51400 - Environmental Stress Management For Turfgrass or
- HORT 51300 - Nutrition Of Horticulture Crops

### Major Selectives (21 credits)

- Business/Management Selectives - Credit Hours: 9.00
  - Turf Science Selectives - Credit hours: 12.00
- See Turf Management and Science Supplemental Information

## Other Departmental/Program Course Requirements (73-75 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- AGECE 33000 - Management Methods For Agricultural Business
- AGECE 33100 - Principles Of Industrial Selling
- AGRY 25500 - Soil Science ♦
- AGRY 36500 - Soil Fertility ♦
- BTNY 11000 - Introduction To Plant Science
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- CHM 11100 - General Chemistry (satisfies Science #1 for core)
- CHM 11200 - General Chemistry (satisfies Science #2 for core)
- CHM 25700 - Organic Chemistry ♦
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning Selective for core)
- STAT 30100 - Elementary Statistical Methods (satisfies Information Literacy for core)
- MGMT 21200 - Business Accounting or
- MGMT 20000 - Introductory Accounting
- **Physics Selective** - Credit Hours: 3.00
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- **Economics Selective** - Credit Hours: 3.00 (satisfies Human Cultures: Behavioral/Social Science for core)
- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- ECON 21000 - Principles Of Economics
- ECON 25100 - Microeconomics

- ECON 25200 - Macroeconomics
- Human Cultures: Humanities Selective - Credit Hours: 3.00 (satisfies Human Cultures: Humanities for core)
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective - Credit Hours: 3.00
- Humanities or Social Science Selective (30000+ level) - Credit Hours: 3.00
- Science, Technology, & Society Selective - Credit Hours: 1.00 (satisfies Science, Technology & Society for core)
- Oral Communication Selective - Credit Hours: 3.00 (satisfies Oral Communication for core)
- Written Communication Selective - Credit Hours: 3.00-4.00 (satisfies Written Communication for core)
- Written or Oral Communications Selective (20000+ level) - Credit Hours: 3.00

## Electives (5-7 credits)

- Elective - Credit Hours: 5.00-7.00

## Supplemental List

- Turf Management and Science Supplemental Information

## Grade Requirements

*Clearly list any/all grade requirements within the program.*

## GPA Requirements

- 2.0 GPA required for Bachelor of Science degree.

## Course Requirements and Notes

*Double-counting policy - where is it allowed and not allowed; specific notes or requirements about courses; repeatable limits, study abroad, etc.*

## Non-course / Non-credit Requirements

*Degree requirements which are not associated to a course. For example: portfolio, work experience, certifications. Should equal 0 credits.*

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Transfer Credit Policy

Transfer courses listed in the **Purdue Transfer Equivalency Guide** with specific Purdue Subject codes (e.g. BIOL) may be used to fulfill degree requirements at the discretion of the College of Agriculture. However, Agriculture transfer courses listed with "UND" Purdue Subject codes cannot be used for any requirements in the College of Agriculture at Purdue.

## College of Agriculture & University Level Requirements

- College of Agriculture International Understanding Selective - Credit Hours: 9.00 (Agricultural Engineering, Biological Engineering, Environmental & Natural Resources Engineering - Credit Hours: 6.00)
- College of Agriculture Multicultural Awareness Selective - Credit Hours: 3.00
- College of Agriculture Humanities or Social Science Selectives (30000+ level) - Credit Hours: 3.00
- Human Cultures: Humanities or Behavioral/Social Sciences Selective (Choose from outside the College of Agriculture) - Credit Hours: 9.00
- College of Agriculture Additional Written or Oral Communication Selectives - Credit Hours: 3.00

## College of Agriculture Pass/No Pass Policy

College of Agriculture Undergraduate Pass/No Pass Policy

## Courses Not Applicable in Agricultural Plans of Study

The following courses are not applicable as credit toward graduation in any College of Agriculture baccalaureate degree program:

- CHM 10000; ENGL 10000, 10900, 11100; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; 15555, PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000 - Discovery Park Undergraduate Research.

Credits earned in one of the following course - MA 15200, 15300, 15400 or MA 15800 - may be used as an **unrestricted** elective in the College of Agriculture undergraduate plans of study, but **may not be used** as a Mathematics and Sciences Selectives.

## Additional Information

*Any additional information that does not fit into any of the categories above.*

## Sample 4-Year Plan

### Fall 1st Year

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- BTNY 11000 - Introduction To Plant Science
- CHM 11100 - General Chemistry
- MA 15800 - Precalculus - Functions And Trigonometry
- Written Communication Selective - Credit Hours: 3.00-4.00

14-15 Credits

### Spring 1st Year



- HORT 10100 - Fundamentals Of Horticulture
- HORT 11000 - Opportunities In Horticulture
- CHM 11200 - General Chemistry
- Economics Selective - Credit Hours: 3.00
- Oral Communication Selective - Credit Hours: 3.00
- Human Cultures: Humanities Selective - Credit Hours: 3.00

## 16 Credits

### Fall 2nd Year

- AGRY 25500 - Soil Science ♦
- BTNY 30100 - Introductory Plant Pathology
- CHM 25700 - Organic Chemistry ♦
- MGMT 21200 - Business Accounting or
- MGMT 20000 - Introductory Accounting
- Written or Oral Communication Selective (20000+ level) - Credit Hours: 3.00

## 16 Credits

### Spring 2nd Year

- AGRY 36500 - Soil Fertility ♦
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 21100 - Fundamentals Of Turfgrass Culture Laboratory
- HORT 30100 - Plant Physiology
- STAT 30100 - Elementary Statistical Methods

## 14 Credits

### Fall 3rd Year

- AGECE 33000 - Management Methods For Agricultural Business
- AGRY 51000 - Turfgrass Science
- BTNY 30400 - Introductory Weed Science
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- Humanities or Social Sciences Selective - Credit Hours: 3.00

## 15 Credits

### Spring 3rd Year

- AGECE 33100 - Principles Of Industrial Selling
- **Physics Selective** - Credit Hours: 3.00
- PHYS 21400 - The Nature Of Physics or
- PHYS 22000 - General Physics

- Turf Management Selective - Credit Hours: 3.00
- Turf Management Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective - Credit Hours: 3.00

## 15-16 Credits

### Fall 4th Year

- AGRY 51200 - Integrated Turfgrass Systems
- AGRY 51400 - Environmental Stress Management For Turfgrass or
- HORT 51300 - Nutrition Of Horticulture Crops
- Business/Management Selective - Credit Hours: 3.00
- Humanities or Social Sciences Selective (30000+ level) - Credit Hours: 3.00
- Turf Management Selective - Credit Hours: 3.00
- Elective - Credit Hours: 3.00

## 16 Credits

### Spring 4th Year

- Business/Management Selective - Credit Hours: 3.00
- Business/Management Selective - Credit Hours: 3.00
- Turf Management Selective - Credit Hours: 3.00
- Science, Technology & Society Selective - Credit Hours: 1.00
- Electives - Credit Hours: 2.00-4.00

## 12-14 Credits

## Pre-Requisite Information

For pre-requisite information, [click here](#).

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL-American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

## Disclaimer

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## Certificate

### Landscape Management and Turf Management Certificate

#### Requirements for the Certificate (23 credits)

##### Required Courses (23 credits)

- AGRY 25500 - Soil Science
- CHM 11100 - General Chemistry
- HORT 10100 - Fundamentals Of Horticulture
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 21100 - Fundamentals Of Turfgrass Culture Laboratory
- HORT 21700 - Woody Landscape Plants
- HORT 31700 - Landscape Contracting And Management
- AGRY 51000 - Turfgrass Science

## Notes

Required Certification in Pesticide Application: Complete certification requirement for an Indiana "For-Hire Pesticide Applicator License" in either category 3a Ornamental Pest Management, or 3b Turf Management. (*Information available from the Office of the Indiana State Chemist - Pesticide Section*)

REQUIRED PROFESSIONAL EXPERIENCE: Complete a minimum of 320 hours of work experience in turf and/or landscape horticulture.

## Prerequisite Information

For current pre-requisites for courses, click [here](#).

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## Minor

### Horticulture Minor

#### Requirements for the Minor (16 credits)

##### Required Courses (7 credits)

- HORT 10100 - Fundamentals Of Horticulture
- HORT 11000 - Opportunities In Horticulture
- HORT 20100 - Plant Propagation

##### Selective Courses (9 credits)

- HORT 21700 - Woody Landscape Plants
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- HORT 29100 - Selected Topics In Horticulture
- HORT 30100 - Plant Physiology
- HORT 30600 - History Of Horticulture
- HORT 31700 - Landscape Contracting And Management
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- HORT 37000 - Professional Floral Design
- HORT 40300 - Tropical Horticulture
- HORT 42700 - Horticulture Capstone
- HORT 43500 - Developing An Agricultural Startup
- HORT 45000 - In The English Landscape: Integrating History, Horticulture, And Landscape Architecture
- HORT 49100 - Special Assignments In Horticulture
- HORT 50600 - Commercial Grape And Wine Production
- HORT 51300 - Nutrition Of Horticulture Crops
- HORT 52500 - The Plant Microbiome
- HORT 54100 - Postharvest Technology Of Fruits And Vegetables
- HORT 55300 - Plant Growth And Development
- HORT 59000 - Special Studies In Horticulture
- SFS 21000 - Small Farm Experience I
- SFS 21100 - Small Farm Experience II

## Note

- Departmental permission is not required to enroll in this minor.

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## **Landscape and Turf Minor**

### **Requirements for the Minor (13 Credits)**

#### **Required Courses (10 credits)**

- HORT 10100 - Fundamentals Of Horticulture
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 21100 - Fundamentals Of Turfgrass Culture Laboratory
- LA 10110 - Survey Of Landscape Architecture
- LA 16100 - Land And Society

#### **Selective Course (3 credits)**

- HORT 21700 - Woody Landscape Plants
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants

### **Notes**

- Departmental permission is not required to enroll in this minor.
- Students in the following major/concentrations **cannot** obtain a Landscape and Turf Minor:
  - Horticulture Landscape Enterprise Management
  - Horticulture Landscape Contracting Management
  - Horticulture Landscape Design
  - Turf Management and Science

### **Disclaimer**

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## **Landscape Management Minor**

### **Requirements for the Minor (12-13 credits)**

#### **Required Courses (9-10 credits)**

- HORT 10100 - Fundamentals Of Horticulture
- HORT 31700 - Landscape Contracting And Management
- HORT 21700 - Woody Landscape Plants or
- HORT 21810 - Flowers For Color or
- HORT 21820 - Hardy Herbaceous Landscape Plants

### Selective Course (3 credits)

- HORT 20100 - Plant Propagation
- HORT 21700 - Woody Landscape Plants \*
- HORT 21810 - Flowers For Color \*
- HORT 21820 - Hardy Herbaceous Landscape Plants \*
- ENTM 41000 - Applied Insect Biology and
- ENTM 41001 - Insects Of Urban Landscapes

### Notes

- Departmental permission is not required to enroll in this minor.
- \*HORT 21700, HORT 21810, and HORT 21820 can only be used as a selective, if not used as the Plant Materials course above.
- Students in the following majors/concentrations **cannot** obtain a Landscape Management Minor:
  - Horticulture/Landscape Enterprise Management
  - Horticulture/Landscape Contracting Management
  - Horticulture/Landscape Design
  - Horticulture/Landscape Horticulture and Design

### Disclaimer

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## Sustainable Food and Farming Systems Minor

The Sustainable Food and Farming Systems minor offers a broad education in agriculture and food systems with a strong component of experiential learning. It draws on the College of Agriculture's vast expertise in agronomic, horticultural and animal-based food production systems, economics and business, and environmental sciences. The minor introduces a number of courses with hands-on training and an opportunity to experience small farming enterprises.

### Requirements for the Minor (18 credits)

#### Required Courses (12 Credits)

- AGRY 10500 - Crop Production or
- HORT 10100 - Fundamentals Of Horticulture

- SFS 21000 - Small Farm Experience I
- SFS 21100 - Small Farm Experience II
- SFS 30100 - Agroecology

### Systems Modules - Choose Three: (3 credits)

- SFS 31100 - Aquaponics
- SFS 31200 - Urban Agriculture
- SFS 31300 - Farm To Fork
- SFS 31400 - Comparative Livestock Production Systems
- SFS 31500 - Principles Of Permaculture

### Selectives (3 credits)

- AGECE 21700 - Economics
- AGECE 25000 - Economic Geography Of World Food And Resources
- AGECE 31000 - Farm Organization
- AGECE 33000 - Management Methods For Agricultural Business
- AGECE 33100 - Principles Of Industrial Selling
- AGRY 37500 - Crop Production Systems
- ASM 10400 - Introduction To Agricultural Systems
- ASM 20100 - Construction And Maintenance
- BTNY 11000 - Introduction To Plant Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 31100 - Insect Ecology
- FNR 21000 - Natural Resource Information Management or
- FS 16100 - Science Of Food
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- MGMT 21200 - Business Accounting
- POL 22300 - Introduction To Environmental Policy

### Disclaimer

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## **Turf Management Minor**

### Requirements for the Minor (13 credits)

#### Required Courses (10 Credits)

- AGRY 25500 - Soil Science

- AGRY 51000 - Turfgrass Science
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 21100 - Fundamentals Of Turfgrass Culture Laboratory

## Selective Course - Choose One (3 Credits)

- AGRY 36500 - Soil Fertility
- AGRY 51200 - Integrated Turfgrass Systems
- AGRY 51400 - Environmental Stress Management For Turfgrass
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes

## Notes

- Departmental permission is not required to enroll in this minor.
- Students in the Turf Management and Science majors cannot obtain a Turf Management Minor.

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## Pre-Program

## Pre-Landscape Architecture

See the program Landscape Architecture, BSLA for information.

Pre-Landscape Architecture Major Change (CODO) Requirements

## Pre-Program Requirement

## 30-31 Credits

## Required Major Courses (9 credits)

- LA 10110 - Survey Of Landscape Architecture
- LA 11600 - Graphic Communication In Design I
- LA 16100 - Land And Society (satisfies Science, Technology, & Society for core)
- LA 21600 - Landscape Architectural Design I



## Other Departmental/Program Course Requirements (21-22 credits)

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- BIOL 11000 - Fundamentals Of Biology I
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 11000 - Introduction To Plant Science ♦
- MA 15800 - Precalculus - Functions And Trigonometry (satisfies Quantitative Reasoning for core)  
**Written Communication Selective** - Credit Hours: 3.00-4.00 ♦ (satisfies Written Communication & Information Literacy for core)
- ENGL 10600 - First-Year Composition
- ENGL 10800 - Accelerated First-Year Composition  
**Oral Communication Selective** - Credit Hours: 3.00 ♦ (satisfies Oral Communication for core)
- COM 11400 - Fundamentals Of Speech Communication
- COM 21700 - Science Writing And Presentation
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills
- SCLA 10200 - Transformative Texts, Critical Thinking And Communication II: Modern World
- Art and Design Selective - Credit Hours: 3.00 (see Landscape Architecture, BSLA for courses)

## University Requirements

### University Core Requirements

For a complete listing of University Core Course Selectives, visit the [Provost's Website](#).

- Human Cultures: Behavioral/Social Science (BSS)
- Human Cultures: Humanities (HUM)
- Information Literacy (IL)
- Oral Communication (OC)
- Quantitative Reasoning (QR)
- Science #1 (SCI)
- Science #2 (SCI)
- Science, Technology, and Society (STS)
- Written Communication (WC)

### Civics Literacy Proficiency Requirement

The Civics Literacy Proficiency activities are designed to develop civic knowledge of Purdue students in an effort to graduate a more informed citizenry. For more information visit the Civics Literacy Proficiency [website](#).

Students will complete the Proficiency by passing a test of civic knowledge, and completing one of three paths:

- Attending six approved civics-related events and completing an assessment for each; or
- Completing 12 podcasts created by the Purdue Center for C-SPAN Scholarship and Engagement that use C-SPAN material and completing an assessment for each; or
- Earning a passing grade for one of **these approved courses** (or transferring in approved AP or departmental credit in lieu of taking a course).

### Upper Level Requirement

- Resident study at Purdue University for at least two semesters and the enrollment in and completion of at least 32 semester hours of coursework required and approved for the completion of the degree. These courses are expected to be at least junior-level (30000+) courses.
- Students should be able to fulfill *most, if not all*, of these credits within their major requirements; there should be a clear pathway for students to complete any credits not completed within their major.

## Fall 1st Semester

- AGR 10100 - Introduction To The College Of Agriculture And Purdue University
- AGR 12000 - Introduction To Horticulture And Landscape Architecture Academic Programs
- LA 10110 - Survey Of Landscape Architecture
- LA 11600 - Graphic Communication In Design I
- LA 16100 - Land And Society
- BIOL 11000 - Fundamentals Of Biology I ♦  
**Written Communication Selective** - Credit Hours: 3.00-4.00 ♦
- ENGL 10600 - First-Year Composition ♦ or
- ENGL 10800 - Accelerated First-Year Composition ♦

## 14-15 Credits

## Spring 2nd Semester

- LA 21600 - Landscape Architectural Design I
- MA 15800 - Precalculus - Functions And Trigonometry
- BIOL 11100 - Fundamentals Of Biology II ♦ or
- BTNY 11000 - Introduction To Plant Science ♦  
**Oral Communication Selective** - Credit Hours: 3.00 ♦
- COM 11400 - Fundamentals Of Speech Communication ♦ or
- COM 21700 - Science Writing And Presentation ♦ or
- EDPS 31500 - Collaborative Leadership: Interpersonal Skills ♦ or
- SCLA 10200 - Transformative Texts, Critical Thinking And Communication II: Modern World ♦
- Art and Design Selective - Credit Hours: 3.00

## 16 Credits

## Notes

### *Change of Options from Pre-landscape Architecture to the Professional Landscape Architecture Program*

Pre-landscape architecture students, who wish to continue into the landscape architecture professional program, or transfer students from other institutions, must qualify by meeting the following criteria, or through further assessment as described below:

1. Overall GPA - The student must be in good academic standing. A minimum overall GPA of 2.5 across all Purdue and transferred credit coursework is necessary for acceptance into the landscape architecture professional program.
2. Grade point average of 3.0 or higher in all landscape architecture prefixed courses taken (LA Index).

3. Completion of LA 10600; or 11600 and 21600; or approved equivalent, and a minimum of 24 credit hours of Purdue accepted college level coursework are the minimum necessary for acceptance into the landscape architecture professional program.

## World Language Courses

World Language proficiency requirements vary by program. The following list is inclusive of all world languages PWL offers for credit; for acceptable languages and proficiency levels, see your advisor. (ASL -American Sign Language; ARAB-Arabic; CHNS-Chinese; FR-French; GER-German; GREK-Greek(Ancient); HEBR-Hebrew(Biblical); HEBR-Hebrew(Modern); ITAL-Italian; JPNS-Japanese; KOR-Korean; LATN-Latin; PTGS=Portuguese; RUSS-Russian; SPAN-Spanish)

## Critical Course

The ♦ course is considered critical.

In alignment with the Degree Map Guidance for Indiana's Public Colleges and Universities, published by the Commission for Higher Education (pursuant to HEA 1348-2013), a Critical Course is identified as "one that a student must be able to pass to persist and succeed in a particular major. Students who want to be nurses, for example, should know that they are expected to be proficient in courses like biology in order to be successful. These would be identified by the institutions for each degree program".

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## Program Information

### Horticulture Supplemental Information

#### Horticulture Major Selectives

##### Supervision/Personnel Selective (3 credits)

- HTM 31200 - Human Resources Management For The Service Industries
- OLS 38600 - Leadership For Organizational Change And Innovation
- OLS 38800 - Leadership Through Teams
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership
- TLI 21300 - Project Management

#### Horticulture Concentration Selectives

## Horticulture Production & Marketing Concentration Selectives (12 credits)

- AGEC 21700 - Economics
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 32100 - Principles Of Commodity Marketing
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 35200 - Quantitative Techniques For Firm Decision Making
- AGEC 42100 - Advanced Commodity Marketing
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 42500 - Estate Planning And Property Transfer
- AGEC 42700 - Advanced Agribusiness Marketing
- AGEC 42900 - Agri-Marketing Analytics
- AGEC 43000 - Agricultural And Food Business Strategy
- AGEC 43100 - Advanced Industrial Sales And Marketing
- AGEC 45100 - Applied Econometrics
- AGEC 45500 - Agricultural Law
- AGEC 45600 - Federal Income Tax Law
- AGEC 49600 - Selected Topics In Agribusiness Management
- AGEC 50600 - Agricultural Marketing And Price Analysis
- AGEC 52400 - Agricultural Finance
- AGEC 52500 - Environmental Policy Analysis
- AGEC 52600 - International Food And Agribusiness Marketing Strategy
- AGEC 53000 - Strategic Agribusiness Management
- ASM 35000 - Safety In Agriculture
- ASM 42000 - Electric Power And Controls
- AGRY 21000 - Fundamentals Of Turfgrass Culture
- AGRY 28500 - World Crop Adaptation And Distribution
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 34900 - Soil Ecology
- AGRY 35500 - Soil Morphology And Geography
- AGRY 36500 - Soil Fertility
- AGRY 37500 - Crop Production Systems
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 45000 - Soil Conservation and Water Management
- AGRY 46500 - Soil Physical Properties
- AGRY 48000 - Plant Genetics
- AGRY 51000 - Turfgrass Science
- AGRY 51200 - Integrated Turfgrass Systems
- AGRY 51500 - Plant Mineral Nutrition
- AGRY 52500 - Crop Physiology And Ecology
- BTNY 26200 - Plant Structure And Tissue Biology
- BTNY 39000 - Selected Topics In Plant Science
- COM 21200 - Approaches To The Study Of Interpersonal Communication
- COM 22400 - Communicating In The Global Workplace
- COM 25000 - Mass Communication And Society
- CSR 28200 - Customer Relations Management
- COM 25300 - Introduction To Public Relations
- COM 25600 - Introduction To Advertising

- COM 30300 - Intercultural Communication
- COM 31800 - Principles Of Persuasion
- COM 32000 - Small Group Communication
- COM 32400 - Introduction To Organizational Communication
- COM 32500 - Interviewing: Principles And Practice
- COM 32800 - Diversity At Work: A Rhetorical Approach
- COM 37400 - Social Interaction Skills: Assessment And Development
- COM 37600 - Communication And Gender
- CSR 30900 - Leadership Strategies
- CSR 33100 - Consumer Behavior
- CSR 34200 - Personal Finance
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTR 20000 - Introduction To Entrepreneurship And Innovation
- ENTR 31000 - Marketing And Management For New Ventures
- ENTR 47000 - Gender, Diversity And Leadership
- ENTM 33500 - Introduction To Insect Identification
- FNR 22310 - Introduction To Environmental Policy
- FNR 22500 - Dendrology
- FNR 44500 - Urban Forest Issues
- FNR 44400 - Arboricultural Practices
- FS 47000 - Wine Appreciation
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- HORT 50600 - Commercial Grape And Wine Production
- HTM 31200 - Human Resources Management For The Service Industries
- MGMT 20000 - Introductory Accounting
- MGMT 21200 - Business Accounting
- MGMT 20100 - Management Accounting I
- MGMT 32300 - Principles Of Marketing
- NRES 23000 - Survey Of Meteorology

## Landscape Enterprise Management Concentration Selectives: Business/Supervision/Personnel Selective (12 credits)

- AGECE 21700 - Economics
- AGECE 32100 - Principles Of Commodity Marketing
- AGECE 32700 - Principles Of Food And Agribusiness Marketing
- AGECE 33300 - Food Distribution - A Retailing Perspective
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 42500 - Estate Planning And Property Transfer
- AGECE 42700 - Advanced Agribusiness Marketing
- AGECE 42900 - Agri-Marketing Analytics
- AGECE 43000 - Agricultural And Food Business Strategy
- AGECE 43100 - Advanced Industrial Sales And Marketing
- AGECE 45100 - Applied Econometrics
- AGECE 45500 - Agricultural Law
- AGECE 45600 - Federal Income Tax Law
- AGECE 49600 - Selected Topics In Agribusiness Management

- AGEC 50600 - Agricultural Marketing And Price Analysis
- AGEC 52400 - Agricultural Finance
- AGEC 52500 - Environmental Policy Analysis
- AGEC 52600 - International Food And Agribusiness Marketing Strategy
- AGEC 53000 - Strategic Agribusiness Management
- COM 21200 - Approaches To The Study Of Interpersonal Communication
- COM 22400 - Communicating In The Global Workplace
- COM 25000 - Mass Communication And Society
- COM 25300 - Introduction To Public Relations
- COM 25600 - Introduction To Advertising
- COM 30300 - Intercultural Communication
- COM 31800 - Principles Of Persuasion
- COM 32000 - Small Group Communication
- COM 32400 - Introduction To Organizational Communication
- COM 32500 - Interviewing: Principles And Practice
- COM 32800 - Diversity At Work: A Rhetorical Approach
- COM 37400 - Social Interaction Skills: Assessment And Development
- COM 37600 - Communication And Gender
- ENGL 20400 - Special Topics In Writing
- ENGL 30400 - Advanced Composition
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTR 20000 - Introduction To Entrepreneurship And Innovation
- ENTR 31000 - Marketing And Management For New Ventures
- ENTR 47000 - Gender, Diversity And Leadership
- HTM 31200 - Human Resources Management For The Service Industries
- MGMT 20100 - Management Accounting I
- MGMT 32300 - Principles Of Marketing
- OLS 38600 - Leadership For Organizational Change And Innovation
- OLS 38800 - Leadership Through Teams
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership

## Plant Science Concentration Selectives (15 credits)

- AGRY 34900 - Soil Ecology
- AGRY 36500 - Soil Fertility
- AGRY 48000 - Plant Genetics
- AGRY 51500 - Plant Mineral Nutrition
- AGRY 52000 - Principles And Methods Of Plant Breeding
- BCHM 46200 - Metabolism
- BCHM 56100 - General Biochemistry I
- BCHM 56200 - General Biochemistry II
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 41500 - Introduction To Molecular Biology
- BTNY 20700 - The Microbial World
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- BTNY 35000 - Biotechnology In Agriculture

- BTNY 42000 - Plant Cellular And Developmental Biology
- BTNY 55000 - Biology Of Fungi
- BTNY 55200 - Molecular Approaches In Plant Biology
- BTNY 55300 - Plant Growth And Development
- HORT 21700 - Woody Landscape Plants
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- HORT 55300 - Plant Growth And Development

## Public Horticulture Concentration: Communication Selective (3 credits)

- COM 21200 - Approaches To The Study Of Interpersonal Communication
- COM 22400 - Communicating In The Global Workplace
- COM 25000 - Mass Communication And Society
- COM 25300 - Introduction To Public Relations
- COM 25600 - Introduction To Advertising
- COM 30300 - Intercultural Communication
- COM 31800 - Principles Of Persuasion
- COM 32000 - Small Group Communication
- COM 32400 - Introduction To Organizational Communication
- COM 32500 - Interviewing: Principles And Practice
- COM 32800 - Diversity At Work: A Rhetorical Approach
- COM 37400 - Social Interaction Skills: Assessment And Development
- COM 37600 - Communication And Gender
- ENGL 23400 - Literature And The Environment
- ENGL 30400 - Advanced Composition
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing

## Public Horticulture Concentration Selective (6 credits)

- AGECE 20300 - Introductory Microeconomics For Food And Agribusiness
- AGECE 20400 - Introduction To Resource Economics And Environmental Policy
- AGECE 21700 - Economics
- AGECE 22000 - Economics Of Agricultural Markets
- AGECE 32100 - Principles Of Commodity Marketing
- AGECE 32700 - Principles Of Food And Agribusiness Marketing
- AGECE 33000 - Management Methods For Agricultural Business
- AGECE 33100 - Principles Of Industrial Selling
- AGECE 33300 - Food Distribution - A Retailing Perspective
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 42100 - Advanced Commodity Marketing
- AGECE 42400 - Financial Management Of Agricultural Business
- AGECE 42500 - Estate Planning And Property Transfer
- AGECE 42700 - Advanced Agribusiness Marketing
- AGECE 42900 - Agri-Marketing Analytics
- AGECE 43000 - Agricultural And Food Business Strategy
- AGECE 43100 - Advanced Industrial Sales And Marketing
- AGECE 45100 - Applied Econometrics
- AGECE 45500 - Agricultural Law

- AGEC 45600 - Federal Income Tax Law
- AGEC 49600 - Selected Topics In Agribusiness Management
- AGEC 50600 - Agricultural Marketing And Price Analysis
- AGEC 52400 - Agricultural Finance
- AGEC 52500 - Environmental Policy Analysis
- AGEC 52600 - International Food And Agribusiness Marketing Strategy
- AGEC 53000 - Strategic Agribusiness Management
- AGEC 53200 - World Food Problems
- AGRY 12500 - Environmental Science And Conservation
- AGRY 21000 - Fundamentals Of Turfgrass Culture
- AGRY 28500 - World Crop Adaptation And Distribution
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 34900 - Soil Ecology
- AGRY 35500 - Soil Morphology And Geography
- AGRY 36500 - Soil Fertility
- AGRY 37500 - Crop Production Systems
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 45000 - Soil Conservation and Water Management
- AGRY 46500 - Soil Physical Properties
- AGRY 48000 - Plant Genetics
- AGRY 51000 - Turfgrass Science
- AGRY 51200 - Integrated Turfgrass Systems
- AGRY 51500 - Plant Mineral Nutrition
- AGRY 52500 - Crop Physiology And Ecology
- ASEC 54000 - Program Development In Agricultural And Extension Education
- ASEC 56500 - Principles Of Adult Education
- ASM 20100 - Construction And Maintenance
- ASM 35000 - Safety In Agriculture
- ASM 42000 - Electric Power And Controls
- BCHM 46200 - Metabolism
- BCHM 56100 - General Biochemistry I
- BCHM 56200 - General Biochemistry II
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 41500 - Introduction To Molecular Biology
- BTNY 26200 - Plant Structure And Tissue Biology
- BTNY 30400 - Introductory Weed Science
- BTNY 35000 - Biotechnology In Agriculture
- COM 21200 - Approaches To The Study Of Interpersonal Communication
- COM 22400 - Communicating In The Global Workplace
- COM 25000 - Mass Communication And Society
- COM 25300 - Introduction To Public Relations
- COM 25600 - Introduction To Advertising
- COM 30300 - Intercultural Communication
- COM 31800 - Principles Of Persuasion
- COM 32000 - Small Group Communication
- COM 32400 - Introduction To Organizational Communication
- COM 32500 - Interviewing: Principles And Practice
- COM 32800 - Diversity At Work: A Rhetorical Approach
- COM 37400 - Social Interaction Skills: Assessment And Development



- COM 37600 - Communication And Gender
- CSR 28200 - Customer Relations Management
- CSR 30900 - Leadership Strategies
- CSR 33100 - Consumer Behavior
- CSR 34200 - Personal Finance
- EDCI 20500 - Exploring Teaching As A Career
- EDCI 27000 - Introduction To Educational Technology And Computing
- EDCI 28500 - Multiculturalism And Education
- ENGL 23400 - Literature And The Environment
- ENGL 30400 - Advanced Composition
- ENGL 42000 - Business Writing
- ENGL 42100 - Technical Writing
- ENTM 33500 - Introduction To Insect Identification
- ENTR 20000 - Introduction To Entrepreneurship And Innovation
- ENTR 31000 - Marketing And Management For New Ventures
- ENTR 47000 - Gender, Diversity And Leadership
- FNR 12500 - Environmental Science And Conservation
- FNR 22310 - Introduction To Environmental Policy
- FNR 22500 - Dendrology
- FNR 44400 - Arboricultural Practices
- FNR 44500 - Urban Forest Issues
- FS 47000 - Wine Appreciation
- HORT 21000 - Fundamentals Of Turfgrass Culture
- HORT 21700 - Woody Landscape Plants
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- HORT 31700 - Landscape Contracting And Management
- HORT 40300 - Tropical Horticulture
- HORT 43500 - Developing An Agricultural Startup
- HORT 50600 - Commercial Grape And Wine Production
- HORT 55300 - Plant Growth And Development
- HTM 31200 - Human Resources Management For The Service Industries
- MGMT 20000 - Introductory Accounting
- MGMT 20100 - Management Accounting I
- MGMT 21200 - Business Accounting
- MGMT 32300 - Principles Of Marketing
- MGMT 44301 - Management Of Human Resources
- MGMT 44362 - Leadership In A Changing World
- MGMT 44428 - Human Resources Management
- MGMT 44429 - Talent Management
- MGMT 44430 - Staffing: Talent Acquisition
- MGMT 44431 - Compensation: Total Rewards
- MGMT 44690 - Negotiation And Decision Making
- OBHR 33000 - Introduction To Organizational Behavior
- OLS 38600 - Leadership For Organizational Change And Innovation
- OLS 38800 - Leadership Through Teams
- PSY 27200 - Introduction To Industrial-Organizational Psychology
- SFS 21000 - Small Farm Experience I
- SFS 21100 - Small Farm Experience II
- SFS 30100 - Agroecology
- SFS 30200 - Principles Of Sustainability

- SFS 31100 - Aquaponics
- SFS 31200 - Urban Agriculture
- SFS 31300 - Farm To Fork
- SFS 31500 - Principles Of Permaculture
- SPAN 10100 - Spanish Level I
- SPAN 10200 - Spanish Level II
- SPAN 20100 - Spanish Level III
- SPAN 20200 - Spanish Level IV
- SPAN 30100 - Spanish Level V
- SPAN 30200 - Spanish Level VI
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership
- TLI 21300 - Project Management

## **Landscape Architecture Supplemental Information**

### **Art & Design Selective (6 credits)**

- AD 10500 - Design I
- AD 10600 - Design II
- AD 11300 - Basic Drawing
- AD 11400 - Drawing II
- AD 11700 - Black And White Photography
- AD 11900 - Color Photography
- AD 12500 - Introduction To Interior Design
- AD 20000 - Beginning Painting
- AD 21300 - Life Drawing I
- AD 22000 - Computers In Art
- AD 22600 - History Of Art To 1400
- AD 22700 - History Of Art Since 1400
- AD 23300 - Electronic Media Studio
- AD 24200 - Ceramics I
- AD 25500 - Art Appreciation
- AD 26200 - Jewelry And Metalwork I
- AD 26500 - Relief Printmaking
- AD 26600 - Silkscreen Printmaking
- AD 26700 - Digital Imaging
- AD 27000 - Constructed Textiles
- AD 27100 - Dyed Textiles
- AD 30400 - Video Art
- AD 31400 - Experimental Drawing
- AD 33300 - Photo Silk Screen
- AD 34200 - Ceramics II
- AD 36200 - Jewelry And Metalwork
- AD 36500 - Intermediate Painting
- AD 36800 - Etching And Intaglio Printmaking
- AD 36900 - Lithographic Printmaking
- AD 37000 - Woven Textiles
- AD 44200 - Ceramics III

- AD 45400 - Modern Architecture
- AD 46200 - Metalsmithing
- AD 46800 - Printmaking III

## Landscape Architecture Selectives (2 credits)

- HORT 21000 - Fundamentals Of Turfgrass Culture and
- HORT 21100 - Fundamentals Of Turfgrass Culture Laboratory
- HORT 21820 - Hardy Herbaceous Landscape Plants
- LA 48100 - Special Topics In Landscape Architecture
- LA 48200 - Contemporary Issues In Landscape Architecture
- SFS 30200 - Principles Of Sustainability
- SFS 31200 - Urban Agriculture
- SFS 31500 - Principles Of Permaculture

## College of Agriculture: Additional Mathematics or Science Selectives

- AGR 33300 - Data Science For Agriculture
- AGECE 35200 - Quantitative Techniques For Firm Decision Making
- AGECE 45100 - Applied Econometrics
- AGRY 12500 - Environmental Science And Conservation
- AGRY 25500 - Soil Science
- AGRY 27000 - Forest Soils
- AGRY 32000 - Genetics
- AGRY 32100 - Genetics Laboratory
- AGRY 33500 - Weather And Climate
- AGRY 36500 - Soil Fertility
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 46500 - Soil Physical Properties
- ANSC 22100 - Principles Of Animal Nutrition
- ANSC 23000 - Physiology Of Domestic Animals
- BCHM 10000 - Introduction To Biochemistry
- BCHM 30700 - Biochemistry
- BCHM 30900 - Biochemistry Laboratory
- BIOL 22100 - Introduction To Microbiology
- BIOL 23100 - Biology III: Cell Structure And Function
- BIOL 23200 - Laboratory In Biology III: Cell Structure And Function
- BIOL 24100 - Biology IV: Genetics And Molecular Biology
- BIOL 24200 - Laboratory In Biology IV: Genetics And Molecular Biology
- BIOL 28600 - Introduction To Ecology And Evolution
- BTNY 11000 - Introduction To Plant Science
- BTNY 26200 - Plant Structure And Tissue Biology
- BTNY 30100 - Introductory Plant Pathology
- BTNY 30500 - Plant Evolution And Taxonomy
- BTNY 35000 - Biotechnology In Agriculture
- BTNY 53500 - Plant Disease Epidemiology
- CHM 22400 - Introductory Quantitative Analysis
- CHM 25700 - Organic Chemistry
- CHM 25701 - Organic Chemistry Laboratory

- CHM 26100 - Organic Chemistry I
- CHM 26200 - Organic Chemistry II
- CHM 26300 - Organic Chemistry Laboratory I
- CHM 26400 - Organic Chemistry Laboratory II
- CHM 25500 - Organic Chemistry For The Life Sciences I
- CHM 25501 - Organic Chemistry For The Life Sciences Laboratory I
- CHM 25600 - Organic Chemistry For The Life Sciences II
- CHM 25601 - Organic Chemistry For The Life Sciences Laboratory II
- CS 18000 - Problem Solving And Object-Oriented Programming
- EAPS 11100 - Physical Geology
- EAPS 11200 - Earth Through Time
- EAPS 12500 - Environmental Science And Conservation
- EAPS 22100 - Survey Of Atmospheric Science
- ENTM 10200 - The Practice Of Science
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 21000 - Introduction To Insect Behavior
- ENTM 24200 - Data Science
- ENTM 25300 - Insect Physiology And Biochemistry
- ENTM 30100 - Experimentation And Analysis
- ENTM 31200 - Plant-Insect Chemical Ecology
- ENTM 32810 - Practical Molecular Biology
- ENTM 35300 - Insecticides And Environment
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- FNR 12500 - Environmental Science And Conservation
- FNR 20100 - Marine Biology
- FNR 23000 - The World's Forests And Society
- FNR 24000 - Wildlife In America
- FNR 24150 - Ecology And Systematics Of Fishes, Amphibians And Reptiles
- FNR 25150 - Ecology And Systematics Of Mammals And Birds
- FNR 30500 - Conservation Genetics
- FNR 35700 - Fundamental Remote Sensing
- HONR 49900 - Honors Research Project (Title: Human Diseases and Disorders)
- HORT 10100 - Fundamentals Of Horticulture
- HORT 30100 - Plant Physiology
- MA 16200 - Plane Analytic Geometry And Calculus II
- MA 16600 - Analytic Geometry And Calculus II
- MA 26100 - Multivariate Calculus
- MA 26500 - Linear Algebra
- NRES 12500 - Environmental Science And Conservation
- NRES 23000 - Survey Of Meteorology
- NRES 25500 - Soil Science
- PHYS 17200 - Modern Mechanics
- PHYS 21400 - The Nature Of Physics
- PHYS 22000 - General Physics
- PHYS 22100 - General Physics
- PHYS 23300 - Physics For Life Sciences I
- PHYS 23400 - Physics For Life Sciences II
- PHYS 24100 - Electricity And Optics
- STAT 22500 - Introduction To Probability Models

- STAT 50200 - Experimental Statistics II
- STAT 51100 - Statistical Methods
- STAT 51200 - Applied Regression Analysis

## **Sustainable Food & Farming Systems Supplemental Information**

### **Ecology/Environment Selective (3 Credits)**

- AGRY 12500 - Environmental Science And Conservation
- AGRY 33500 - Weather And Climate
- AGRY 33700 - Environmental Hydrology
- AGRY 33800 - Environmental Field Skills
- ASM 23600 - Environmental Systems Management
- BTNY 30200 - Plant Ecology
- EAPS 12500 - Environmental Science And Conservation
- ENTM 31100 - Insect Ecology
- FNR 21000 - Natural Resource Information Management
- FNR 37500 - Human Dimensions of Natural Resource Management
- FNR 54300 - Conservation Biology I
- NRES 12500 - Environmental Science And Conservation
- POL 22300 - Introduction To Environmental Policy

### **Pest Management Selective (6 Credits)**

- BTNY 30100 - Introductory Plant Pathology
- BTNY 30400 - Introductory Weed Science
- BTNY 53500 - Plant Disease Epidemiology
- ENTM 20600 - General Entomology
- ENTM 20700 - General Entomology Laboratory
- ENTM 41000 - Applied Insect Biology
- ENTM 41001 - Insects Of Urban Landscapes
- ENTM 41002 - Insects Of Agricultural Crops

### **Systems Modules Selective (6 Credits)**

- HORT 12100 - Medicine In The Garden
- SFS 31100 - Aquaponics
- SFS 31200 - Urban Agriculture
- SFS 31300 - Farm To Fork
- SFS 41100 - Structural Racism In US Agriculture
- SFS 41200 - Colonialism, Globalization, And Food Justice
- SFS 41300 - The Cultures And Agricultures Of The United States
- SFS 31500 - Principles Of Permaculture

## **Turf Management and Science Supplemental Information**

## Business/Management Selective (9 credits)

- AGEC 20201 - Introduction To Data Analytics For Agricultural Business
- AGEC 22000 - Economics Of Agricultural Markets
- AGEC 32700 - Principles Of Food And Agribusiness Marketing
- AGEC 33300 - Food Distribution - A Retailing Perspective
- AGEC 42400 - Financial Management Of Agricultural Business
- AGEC 42500 - Estate Planning And Property Transfer
- AGEC 42900 - Agri-Marketing Analytics
- AGEC 43000 - Agricultural And Food Business Strategy
- AGEC 43100 - Advanced Industrial Sales And Marketing
- AGEC 45100 - Applied Econometrics
- AGEC 45500 - Agricultural Law
- AGEC 45600 - Federal Income Tax Law
- AGEC 49600 - Selected Topics In Agribusiness Management
- AGEC 50600 - Agricultural Marketing And Price Analysis
- AGEC 52400 - Agricultural Finance
- AGEC 52500 - Environmental Policy Analysis
- AGEC 53000 - Strategic Agribusiness Management
- CSR 20900 - Introduction To Retail Management
- CSR 28200 - Customer Relations Management
- CSR 30900 - Leadership Strategies
- CSR 31500 - Relationship Selling
- CSR 33100 - Consumer Behavior
- CSR 33200 - Cross-Cultural Marketing And International Retailing
- CSR 34200 - Personal Finance
- CSR 38600 - Risk Management
- CSR 40400 - Strategic Issues For Sales And Retailing
- CSR 40600 - E-Retailing
- CSR 41500 - Sales Force Management
- CSR 48400 - Consumer Investment And Savings Decisions
- CSR 48500 - Case Studies In Financial Planning
- CSR 48600 - Retirement Planning And Employee Benefits
- CSR 48100 - Ethics And Compliance In Financial Counseling And Planning
- ENTR 20000 - Introduction To Entrepreneurship And Innovation
- ENTR 31000 - Marketing And Management For New Ventures
- TLI 11200 - Foundations Of Organizational Leadership
- TLI 15200 - Business Principles For Organizational Leadership
- TLI 21300 - Project Management

## Turf Management Selective (9 credits)

- AGRY 34900 - Soil Ecology
- AGRY 33500 - Weather And Climate
- AGRY 33700 - Environmental Hydrology
- AGRY 33800 - Environmental Field Skills
- AGRY 38500 - Environmental Soil Chemistry
- AGRY 46500 - Soil Physical Properties
- ASM 20100 - Construction And Maintenance
- ASM 21600 - Introduction To Surveying

- HORT 20100 - Plant Propagation
- HORT 21700 - Woody Landscape Plants
- HORT 21810 - Flowers For Color
- HORT 21820 - Hardy Herbaceous Landscape Plants
- HORT 31700 - Landscape Contracting And Management
- HORT 31800 - Field Production Of Horticultural Crops
- HORT 31900 - Controlled Environment Production Of Horticultural Crops
- NRES 23000 - Survey Of Meteorology