

AGRICULTURAL AND EXTENSION EDUCATION, B.S.

Begin Campus: Any Penn State Campus

End Campus: University Park

Program Description

This major helps prepare students for positions in education in agriculture, including schools and colleges, Cooperative Extension, business, trade and professional associations, and government agencies. The Department administers a program approved by the Pennsylvania Department of Education for the preparation of agriculture teachers in public school systems. This includes programs in agricultural production, mechanics, supplies, resources, products, forestry, horticulture, and other agricultural areas.

Students take courses in agricultural and natural resource sciences, leadership and communications, natural science, social science and general education. Students seeking teacher certification schedule professional courses in education and psychology.

What is Agricultural and Extension Education?

School-based Agriculture Education employed through the Three-Circle Model of FFA, supervised agricultural experience and classroom instruction educates nearly 1 million secondary students nationally, teaching future agriculturalists on the topics of food, fiber, and natural resources. AEE graduates are prepared to enter the workforce as middle and high school agricultural educators, with the pedagogical and technical content knowledge to equip students to be college and career ready.

You Might Like this Program If...

- You enjoy working with youth, community stakeholders, and fellow educators
- You desire to be an advocate for the agriculture industry
- You have a passion for equipping students with the problem-solving skills necessary to address grand global challenges
- You want to teach practical and applied STEM concepts in the classroom

Entrance to Major

Pennsylvania Teacher certification regulations require students to have a GPA of 3.0; satisfactorily complete any basic-skills or entrance testing requirements as specified by the Pennsylvania Department of Education in force at the time of application for entrance to the major; and complete an approved Educator Preparation Program. The Educator Preparation Program at Penn State includes documentation of at least 80 hours of volunteer or paid education work experience with learners of the age group the candidate plans to teach. At least 40 of these age-appropriate 80 hours must be with learners whose cultural, social, or ethnic backgrounds differ from the candidate's own; completion of an early field experience specified by the certification program; completion of at least 48 semester credit hours, including ENGL 15 or ENGL 30H, 3 credits of literature, and 6 credits of quantification and secure occupational experience in the requested area of certification.

(See also: Teacher Education Programs (<https://ed.psu.edu/academics/teacher-testing-certification/>))

Degree Requirements

For students seeking teacher certification, the Bachelor of Science degree in Agricultural and Extension Education, a minimum of 125 credits is required:

Requirement	Credits
General Education	45
Electives	0-1
Requirements for the Major	107-113

28 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 6 credits of GS courses; 9 credits of GN courses; 4 credits of GQ courses; 9 credits of GWS courses.

Requirements for the Major

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (<http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44>).

Common Requirements for the Major (All Options)

Code	Title	Credits
Prescribed Courses		
AEE 100	Agricultural Education Orientation	3
AEE 311	Developing Youth Leadership through Organization and Program Structure	3
AEE 349	Shop Processes for Agricultural Educators	3
AEE 350	Teaching Methods for Agricultural and Environmental Laboratories	3
AEE 495	Internship	12
AGBM 101	Economic Principles of Agribusiness Decision Making	3
BIOL 110	Biology: Basic Concepts and Biodiversity	4
INTAG 100N	Everyone Eats: Hunger, Food Security & Global Agriculture	3
WFED 413	Vocational Education for Special-Needs Learners	3
WFED 414	Teaching Career and Technical Education Content to Diverse Learners	3
WFED 450	Cultural Diversity in the Workplace	3
<i>Prescribed Courses: Require a grade of C or better</i>		
AEE 295	Observation of Teaching in Agriculture and Environmental Science	3
AEE 313	School-Based Program Planning and Instructional Development	2
AEE 412	Methods of Teaching Agriculture and Environmental Science	4
AEE 413	Program Planning and Instructional Development	3-4
EDPSY 14	Learning and Instruction	3
EDTHP 115	Education in American Society	3
ENGL 202C	Effective Writing: Technical Writing	3
SOILS 101	Introductory Soil Science	3
STAT 200	Elementary Statistics	4

Additional Courses

Select 4 credits of the following:	4
BIOL 220W Biology: Populations and Communities	
BIOL 230W Biology: Molecules and Cells	
BIOL 240W Biology: Function and Development of Organisms	

Additional Courses: Require a grade of C or better

Select 3 credits from the following:	3
CAS 100 Effective Speech	
CAS 100A Effective Speech	
CAS 100B Effective Speech	

Select 3 credits from the following:	3
CHEM 101 Introductory Chemistry	
CHEM 110 Chemical Principles I	
CHEM 130 Introduction to General, Organic, and Biochemistry	

Select 3 credits from the following:	3
ENGL 15 Rhetoric and Composition	
ENGL 30H Honors Rhetoric and Composition	
ESL 15 ESL Composition for American Academic Communication II	

Requirements for the Option

Select an option	23-28
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Requirements for the Option Environmental Science Option (28 Credits)

Code	Title	Credits
Prescribed Courses		
AGRO 28	Principles of Crop Management	3
ANSC 201	Animal Science	4
Supporting Courses and Related Areas		
Select 3 credits of W courses offered in the College		3
Select 3 credits in biological, physical ecosystems		3
Select 6 credits in environmental impact management		6
Select 6 credits in environmental learning		6
Select 3 credits in social, political, and legal aspects of environmental science		3

Production Option (23 credits)

Code	Title	Credits
Supporting Courses and Related Areas		
Select 3 credits of W courses offered in the College		3
Select 8 credits in agriculture		8
Select 6 credits in animal science		6
Select 6 credits in plant/soil science		6

General Education

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (<https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/>) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required.)

- **Quantification (GQ):** 6 credits
- **Writing and Speaking (GWS):** 9 credits

Knowledge Domains

- **Arts (GA):** 6 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 6 credits
- **Social and Behavioral Sciences (GS):** 6 credits
- **Natural Sciences (GN):** 9 credits

Integrative Studies (may also complete a Knowledge Domain requirement)

- **Inter-Domain or Approved Linked Courses:** 6 credits

University Degree Requirements

First Year Engagement

All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement

6 credits are required and may satisfy other requirements

- United States Cultures: 3 credits
- International Cultures: 3 credits

Writing Across the Curriculum

3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits

A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work

Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition

The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (<http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80>)). For more information, check the Suggested Academic Plan for your intended program.

Program Learning Objectives

- Students will be able to analyze the needs of a particular educational situation, formulate a plan for program delivery, critically review and reflect on the program and implement changes.
- Students will be able to engage stakeholders in the development of quality educational programming.
- Students will be able to meet the criteria for teacher certification in Pennsylvania, as measured by the Pennsylvania Department of Education 430 form criteria (planning, instruction, classroom environment, professional development).
- Students will show competence in content knowledge required by the state certification office by successfully passing the Agriculture PRAXIS examination.

Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and-out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

University Park

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Suggested Academic plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2022-23 academic year. To access previous years' suggested academic plans, please visit the archive (<https://bulletins.psu.edu/undergraduate/archive/>) to view the appropriate Undergraduate Bulletin edition (*Note: the archive only contains suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin*).

Environmental Science Option: Agricultural and Extension Education, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year		
Fall	Credits Spring	Credits
ENGL 15, 30H, or ESL 15 ^{‡##†}	3 BIOL 220W, 230W, or 240W	4
General Education Course (GQ - MATH 21 recommended) ^{‡##†}	3 CAS 100, 100A, 100B, or 100C ^{‡†}	3
BIOL 110 ^{#†}	4 EDTHP 115 ^{*#}	3
AG 150	2 SOILS 101	3
AEE 100 [#]	3 General Education Course (GHW)	1.5
General Education Course (Literature Selection) [#]	3 General Education Course	3
	18	17.5

Second Year		
Fall	Credits Spring	Credits
CHEM 130 [#]	3 ENGL 202C ^{‡†}	3
AGRO 28	3 STAT 200 ^{‡##†}	4
AGBM 101 [†]	3 Environmental Learning Course ¹	3
EDPSY 14 ^{*#}	3 Social, Legal, Political Aspects ¹	3
Environmental Learning Course ¹	3 General Education Course (GHW)	1.5
General Education Course	3	
	18	14.5

Third Year		
Fall	Credits Spring	Credits
WFED 413	3 ANSC 201	4
AEE 311	3 INTAG 100N [†]	3
College Writing Across the Curriculum Course ¹	3 WFED 414	3
Environmental Impact Management ¹	3 AEE 295 [*]	1
General Education Course	3 AEE 349	3
General Education Course	3 Environmental Impact Management ¹	3
	18	17

Fourth Year		
Fall	Credits Spring	Credits
AEE 412 [*]	4 AEE 313 [*]	2
AEE 413 [*]	3 AEE 495	10
AEE 295 [*]	1	
AEE 350	3	
WFED 450	3	
Biological/Physical Ecosystems Course	3	
	17	12

Total Credits 132

* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

¹ See your academic adviser for a supporting course list.

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS, and Integrative Studies). Foundations courses (GWS and GQ) require a grade of 'C' or better.

Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and replace both ENGL 30H and CAS 100. Each course is 3 credits.

Advising Notes:

- 3.00 GPA required before admission into teacher certification program.
- A literature course is required in order to receive a teaching certification. Please see an academic adviser for a listing of literature courses. This course can be used toward fulfillment of GH requirements.

Production Option: Agricultural and Extension Education, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year		
Fall	Credits Spring	Credits
ENGL 15, 30H, or ESL 15 ^{‡#†}	3 BIOL 220W, 230W, or 240W	4
General Education Course (GQ - MATH 21 recommended) ^{‡#†}	3 CAS 100, 100A, 100B, or 100C ^{‡†}	3
BIOL 110 ^{#†}	4 EDTHP 115 ^{*#}	3
AEE 100 [#]	3 SOILS 101	3
AG 150	2 General Education Course (GHW)	1.5
General Education Course (Literature Selection) [#]	3 General Education Course	3
	18	17.5
Second Year		
Fall	Credits Spring	Credits
CHEM 130 [#]	3 ENGL 202C ^{‡†}	3
AGBM 101 [†]	3 STAT 200 ^{‡#†}	4
EDPSY 14 ^{*#}	3 WFED 414	3
Plant/Soil Science Course ¹	3 General Education Course	3
General Education Course	3	
General Education Course (GHW)	1.5	
	16.5	13
Third Year		
Fall	Credits Spring	Credits
WFED 413	3 INTAG 100N [†]	3
AEE 311	3 WFED 450	3
College Writing Across the Curriculum Course ¹	3 AEE 295 [*]	1
Animal Science Course ¹	3 AEE 349	3
Ag Course ¹	3 Animal Science Course ¹	3
Elective	2 Plant/Soil Science Course ¹	3
	17	16
Fourth Year		
Fall	Credits Spring	Credits
AEE 412 [*]	4 AEE 313 [*]	2
AEE 413 [*]	3 AEE 495	10
AEE 295 [*]	1	
AEE 350	3	
Ag Course ¹	3	
Ag Course ¹	2	
	16	12

Total Credits 126

- * Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

¹ See your academic adviser for a supporting course list.

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Advising Notes:

- 3.00 GPA required before admission into teacher certification program.
- A literature course is required in order to receive a teaching certification. Please see an academic adviser for a listing of literature courses. This course can be used toward fulfillment of GH requirements.

Environmental Science Option: Agricultural and Extension Education, B.S. at Commonwealth Campuses

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

Fall	Credits Spring	Credits
ENGL 15, 30H, or ESL 15 ^{‡#†}	3 BIOL 220W, 230W, or 240W	4
General Education Course (GQ - MATH 21 recommended) ^{‡#†}	3 CAS 100, 100A, 100B, or 100C ^{‡†}	3
BIOL 110 ^{#†}	4 Environmental Learning Course ¹	3
EDTHP 115 ^{*#}	3 General Education Course (Literature Selection) [#]	3
First Year Seminar	1-3 General Education Course (GHW)	1.5
General Education Course	3	
	17-19	14.5

Second Year

Fall	Credits Spring	Credits
CHEM 130 [#]	3 ENGL 202C ^{‡†}	3
AGBM 101 [†]	3 STAT 200 ^{‡#†}	4
EDPSY 14 ^{*#}	3 SOILS 101	3
Biological, Physical Ecosystems Course ¹	3 General Education Course	3
Social, Policial, Legal Aspects Course ¹	3 General Education Course (GHW)	1.5
General Education Course	3	
	18	14.5

Third Year

Fall	Credits Spring	Credits
WFED 413	3 ANSC 201	4
AEE 311	3 INTAG 100N [†]	3
AGRO 28	3 WFED 414	3
AEE 100 [#]	3 AEE 295 [*]	1
Environmental Impact Management ¹	3 AEE 349	3
College Writing Across the Curriculum Course ¹	3 Environmental Impact Management ¹	3
	18	17

Fourth Year

Fall	Credits Spring	Credits
AEE 412 [*]	4 AEE 313 [*]	2
AEE 413 [*]	3 AEE 495	10
AEE 295 [*]	1	
AEE 350	3	

WFED 450	3	
	14	12

Total Credits 125-127

- * Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
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Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

Advising Notes:

- 3.00 GPA required before admission into teacher certification program.
- A literature course is required in order to receive a teaching certification. Please see an academic adviser for a listing of literature courses. This course can be used toward fulfillment of GH requirements.

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First Year		
Fall	Credits Spring	Credits
ENGL 15, 30H, or ESL 15 ^{‡##†}	3 BIOL 220W, 230W, or 240W	4
General Education Course (GQ - MATH 21 recommended) ^{‡##†}	3 CAS 100 ^{‡†}	3
EDTHP 115 ^{*#}	3 EDPSY 14 ^{*#}	3
BIOL 110 ^{#†}	4 Ag Course ¹	3
First Year Seminar	1-3 General Education Course (GHW)	1.5
General Education Course	3	
17-19		14.5
Second Year		
Fall	Credits Spring	Credits
CHEM 130 [#]	3 ENGL 202C ^{‡†}	3
STAT 200 ^{‡##†}	4 SOILS 101	3
AGBM 101 [†]	3 Plant/Soil Science Course ¹	3
General Education Course	3 Animal Science Course ¹	3
General Education Course	3 General Education Course (Literature Selection) [#]	3
General Education Course (GHW)	1.5	
17.5		15
Third Year		
Fall	Credits Spring	Credits
WFED 413	3 INTAG 100N [†]	3
AEE 100 [#]	3 WFED 414	3
AEE 311	3 WFED 450	3
College Writing Across the Curriculum Course ¹	3 AEE 295 [*]	1
Plant/Soil Science Course ¹	3 AEE 349	3
	Ag Course ¹	3
	Animal Science Course ¹	3
15		19
Fourth Year		
Fall	Credits Spring	Credits
AEE 412 [*]	4 AEE 313 [*]	2
AEE 413 [*]	3 AEE 495	10
AEE 295 [*]	1	
AEE 350	3	
Ag Course ¹	3	
14		12

Total Credits 124-126

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Advising Notes:

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Professional Licensure/Certification

Many U.S. states and territories require professional licensure/certification to be employed. If you plan to pursue employment in a licensed profession after completing this program, please visit the Professional Licensure/Certification Disclosures by State (<https://psu.edu/state-licensure-disclosures/>) interactive map.

Contact

University Park

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