

FOREST ECOSYSTEMS, B.S.

Seven Penn State campuses are scheduled for closure after Spring 2027: DuBois, Fayette, New Kensington, Mont Alto, Shenango, Wilkes-Barre, and York. New students are not being admitted at these campuses.

Begin Campus: Any Penn State Campus

End Campus: University Park

Degree Requirements

For the Bachelor of Science degree in Forest Ecosystems, a minimum of 120 credits is required for all options:

Requirement	Credits
General Education	45
Electives	3-8
Requirements for the Major	94-99

27 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 9 credits of GN courses; 6 credits of GQ courses; 3 credits of GS courses; 9 credits of GWS courses.

Students should be aware that, in most cases, completion of the Forest Ecosystems degree in four years requires enrollment at the University Park campus beginning the fall semester of the sophomore year.

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 (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/>).

Common Requirements for the Major (All Options)

Code	Title	Credits
Prescribed Courses		
FOR 123N	Forests, Trees, and People	3
FOR 204	Silvics and Forest Dynamics	2
SOILS 101	Introductory Soil Science	3
<i>Prescribed Courses: Require a grade of C or better</i>		
FOR 203	Field Dendrology	3
FOR 255	GPS and GIS Applications for Natural Resources Professionals	3
FOR 308	Forest Ecology	3
Additional Courses		
Select 3 credits from the following:		3
AGBM 101	Economic Principles of Agribusiness Decision Making	
ECON 102	Introductory Microeconomic Analysis and Policy	
ECON 104	Introductory Macroeconomic Analysis and Policy	
<i>Additional Courses: Require a grade of C or better</i>		
CAS/ENGL 138T	Rhetoric and Civic Life II	3
or CAS 100	Effective Speech	
ENGL 202C	Effective Writing: Technical Writing	3
or ENGL 202D	Effective Writing: Business Writing	
Select 3 credits from the following:		3

ENGL 15	Rhetoric and Composition	
ENGL 30H	Honors Rhetoric and Composition	
ENGL/CAS 137H	Rhetoric and Civic Life I	
Select 3-4 credits from the following:		3-4
STAT 200	Elementary Statistics	
STAT 240	Introduction to Biometry	
STAT 250	Introduction to Biostatistics	
Requirements for the Option		
Select an option		62-66

Requirements for the Option

Biodiversity and Conservation Option (62-63 credits)

Code	Title	Credits
Prescribed Courses		
BIOL 110	Biology: Basic Concepts and Biodiversity	4
FOR 201N	Global Change and Ecosystems	3
FOR/WFS 431	Conservation Genetics	3
FOR 445	Wildlife Habitat Management	3
SOILS 102	Introductory Soil Science Laboratory	1
WFS/FOR 430	Conservation Biology	3
WFS/FOR 465	Restoration Ecology	4
<i>Prescribed Courses: Require a grade of C or better</i>		
BIOL 220W	Biology: Populations and Communities	4
Additional Courses		
CHEM 110	Chemical Principles I	3
or CHEM 130	Introduction to General, Organic, and Biochemistry	
FOR 450W	Human Dimensions of Natural Resources	3
or FOR 480	Policy and Administration	
Select 3 credits from the following:		3
FOR 455	Remote Sensing and Spatial Data Handling	
GEOG 363	Geographic Information Systems	
SOILS 450	Environmental Geographic Information Systems	

Additional Courses: Require a grade of C or better

MATH 110	Techniques of Calculus I	4
or MATH 140	Calculus With Analytic Geometry I	
Select 3-4 credits from the following:		3-4
FOR 266	Forest Resources Measurements	
FOR 350	Forest Ecosystem Monitoring and Data Analysis	
WFS 310	Wildlife and Fisheries Measurements	
WFS 340	Statistics for Conservation of Wild Populations	

Supporting Courses and Related Areas

In consultation with academic adviser, select 21 credits from department list for the option. A minimum of 12 credits must be 300- or 400-level. If FOR 450W is not selected as an Additional Course, then Supporting Course selections must include FOR 450W or WFS 447W.		21
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Forest Management Option (63-66 credits)

Code	Title	Credits
Prescribed Courses		
ENT 313	Introduction to Entomology	2
FOR 320	Wildland Fire Management	3
FOR 421	Silviculture: Applied Forest Ecology	3

FOR 440	Forest and Conservation Economics	3
FOR 442	Forest Conservation: Principles and Practices	3
FOR 470	Watershed Management	3
FOR 480	Policy and Administration	3
PPEM 318	Diseases of Forest and Shade Trees	2
<i>Prescribed Courses: Require a grade of C or better</i>		
FOR 266	Forest Resources Measurements	4
FOR 350	Forest Ecosystem Monitoring and Data Analysis	3
FOR 455	Remote Sensing and Spatial Data Handling	3
FOR 466W	Forest Management and Planning	3

Additional Courses

BIOL 110	Biology: Basic Concepts and Biodiversity	3-4
or BIOL 127	Introduction to Plant Biology	
CHEM 110	Chemical Principles I	3
or CHEM 130	Introduction to General, Organic, and Biochemistry	
FOR 401	Urban Forest Management	3
or FOR 450W	Human Dimensions of Natural Resources	
WFS 209N	Wildlife and Fisheries Conservation	3
or FOR 445	Wildlife Habitat Management	

Additional Courses: Require a grade of C or better

Select 4-6 credits from the following: 4-6

MATH 22 & MATH 26	College Algebra With Analytic Geometry and Applications II and Plane Trigonometry and Applications of Trigonometry	
MATH 22 & MATH 33	College Algebra With Analytic Geometry and Applications II and Mathematics for Sustainability	
MATH 22 & MATH 34	College Algebra With Analytic Geometry and Applications II and The Mathematics of Money	
MATH 22 & AGBM 106	College Algebra With Analytic Geometry and Applications II and Agribusiness Problem Solving	
MATH 41	Trigonometry and Analytic Geometry	
MATH 110	Techniques of Calculus I	
MATH 140	Calculus With Analytic Geometry I	

Supporting Courses and Related Areas

In consultation with academic adviser, select 12 credits from department for the option. A minimum of six credits must be 300- or 400-level. 12

Forests, Trees, and People Option (63-66 credits)

Code	Title	Credits
Prescribed Courses		
CAS 404	Conflict Resolution and Negotiation	3
FOR 320	Wildland Fire Management	3
FOR 403	Invasive Forest Plants: Identification, Ecology, and Management	3
FOR 421	Silviculture: Applied Forest Ecology	3
FOR 440	Forest and Conservation Economics	3
FOR 480	Policy and Administration	3
SOILS 422	Natural Resources Conservation and Community Sustainability	4

Prescribed Courses: Require a grade of C or better

FOR 266	Forest Resources Measurements	4
FOR 401	Urban Forest Management	3
FOR 450W	Human Dimensions of Natural Resources	3

Additional Courses

BIOL 110	Biology: Basic Concepts and Biodiversity	3-4
or BIOL 127	Introduction to Plant Biology	
CHEM 110	Chemical Principles I	3
or CHEM 130	Introduction to General, Organic, and Biochemistry	

Select 3 credits from the following: 3

EDPSY 14	Learning and Instruction	
EDTHP 115	Education in American Society	
RPTM 325	Principles of Environmental Interpretation	

Select 3 credits from the following: 3

AG 160	Introduction into Ethics and Issues in Agriculture	
ANTH 45N	Cultural Diversity: A Global Perspective	
METEO 133N	Ethics of Climate Change	
PHIL 118	Environmental Philosophy	

Select 3 credits from the following: 3

FOR 455	Remote Sensing and Spatial Data Handling	
GEOG 363	Geographic Information Systems	
SOILS 450	Environmental Geographic Information Systems	

Additional Courses: Require a grade of C or better

Select 4-6 credits from the following: 4-6

MATH 22 & MATH 26	College Algebra With Analytic Geometry and Applications II and Plane Trigonometry and Applications of Trigonometry	
MATH 22 & MATH 33	College Algebra With Analytic Geometry and Applications II and Mathematics for Sustainability	
MATH 22 & MATH 34	College Algebra With Analytic Geometry and Applications II and The Mathematics of Money	
MATH 22 & AGBM 106	College Algebra With Analytic Geometry and Applications II and Agribusiness Problem Solving	
MATH 41	Trigonometry and Analytic Geometry	
MATH 110	Techniques of Calculus I	
MATH 140	Calculus With Analytic Geometry I	

Supporting Courses and Related Areas

In consultation with academic adviser, select 12 credits from department for the option. A minimum of 6 credits must be 300- or 400-level. 12

Watershed Ecohydrology Option (64 credits)

Code	Title	Credits
Prescribed Courses		
BIOL 110	Biology: Basic Concepts and Biodiversity	4
CHEM 110	Chemical Principles I	3
CHEM 111	Experimental Chemistry I	1
CHEM 112	Chemical Principles II	3
CHEM 113	Experimental Chemistry II	1
FOR 475	Principles of Forest Soils Management	3
MATH 141	Calculus with Analytic Geometry II	4

PHYS 211	General Physics: Mechanics	4
PHYS 213	General Physics: Fluids and Thermal Physics	2
SOILS 102	Introductory Soil Science Laboratory	1
<i>Prescribed Courses: Require a grade of C or better</i>		
FOR 350	Forest Ecosystem Monitoring and Data Analysis	3
FOR 370	Watershed Ecohydrology	3
FOR 470	Watershed Management	3
FOR 477	Field Methods in Watershed Ecohydrology	3
MATH 140	Calculus With Analytic Geometry I	4
Additional Courses		
FOR 455	Remote Sensing and Spatial Data Handling	3
or SOILS 450	Environmental Geographic Information Systems	
FOR 496	Independent Studies	1
or SOILS 496	Independent Studies	
GEOSC 1	Physical Geology	3
or GEOSC 20	Planet Earth	
Select a writing-intensive (W) course offered in the College of Agricultural Sciences		3
Supporting Courses and Related Areas		
In consultation with academic adviser, select 12 credits from department list for the option. A minimum of 6 credits must be 300- or 400-level.		12

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 and Inter-Domain courses do not meet this requirement.)

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

Breadth in the Knowledge Domains (Inter-Domain courses do not meet this requirement.)

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

Integrative Studies

- **Inter-Domain Courses (Inter-Domain):** 6 credits

Exploration

- **GN**, may be completed with Inter-Domain courses: 3 credits
- **GA, GH, GN, GS, Inter-Domain courses.** This may include 3 credits of World Language course work beyond the 12th credit level or the requirements for the student's degree program, whichever is higher: 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 (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/>)). For more information, check the Suggested Academic Plan for your intended program.