

# ENVIRONMENTAL RESOURCE MANAGEMENT, B.S.

**Begin Campus:** Any Penn State Campus

**End Campus:** University Park

## Degree Requirements

**For the Bachelor of Science degree in Environmental Resource Management, a minimum of 121 credits is required:**

Requirement	Credits
General Education	45
Electives	0-8
Requirements for the Major	95-108

27-30 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; 3-6 credits of GS 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 (<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
<b>Prescribed Courses</b>		
CHEM 112	Chemical Principles II	3
ERM 411	Legal Aspects of Resource Management	3
SOILS 102	Introductory Soil Science Laboratory	1
<i>Prescribed Courses: Require a grade of C or better</i>		
ASM 327	Soil and Water Resource Management	3
CHEM 110	Chemical Principles I	3
CHEM 111	Experimental Chemistry I	1
ENGL 202C	Effective Writing: Technical Writing	3
ERM 151	Careers and Issues in Environmental Resource Management	1
ERM 300	Basic Principles and Calculations in Environmental Analysis	3
SOILS 101	Introductory Soil Science	3
<b>Additional Courses</b>		
AGBM 101	Economic Principles of Agribusiness Decision Making	3
or ECON 102	Introductory Microeconomic Analysis and Policy	
CHEM 202	Fundamentals of Organic Chemistry I	3
or CHEM 210	Organic Chemistry I	
PHYS 211	General Physics: Mechanics	4
or PHYS 250	Introductory Physics I	
<i>Additional Courses: Require a grade of C or better</i>		
CAS 100A	Effective Speech	3

or CAS/ENGL 138T	Rhetoric and Civic Life II	
MATH 110	Techniques of Calculus I	4
or MATH 140	Calculus With Analytic Geometry I	
Select 3 credits from the following:		3
ENGL 15	Rhetoric and Composition	
ENGL 30H	Honors Rhetoric and Composition	
CAS/ENGL 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		48-60
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### Requirements for the Option

#### Environmental Science Option (58-60 credits)

Code	Title	Credits
<b>Prescribed Courses</b>		
BIOL 220W	Biology: Populations and Communities	4
CED 201	Introductory Environmental and Resource Economics	3
SOILS 450	Environmental Geographic Information Systems	3
<i>Prescribed Courses: Require a grade of C or better</i>		
BIOL 110	Biology: Basic Concepts and Biodiversity	4
ERM 412	Resource Systems Analysis	3
ERM 413W	Case Studies in Ecosystem Management	3

#### Additional Courses

GEOG 160	Mapping Our Changing World	3
or GEOG 260	Geographic Information in a Changing World: Introduction to GIScience	
GEOSC 1	Physical Geology	3
or GEOSC 303	Introduction to Environmental Geology	
Select 6 credits from any 400-level ERM courses		6
<i>Additional Courses: Require a grade of C or better</i>		
MATH 111	Techniques of Calculus II	2-4
or MATH 141	Calculus with Analytic Geometry II	

#### Supporting Courses and Related Areas

Select 3 credits in ecology		3
Select 18 credits of specialization/minor courses in consultation with adviser		18
Select 3 credits in communications/sustainability/leadership		3

#### Soil Science Option (48-50 credits)

Code	Title	Credits
<b>Prescribed Courses</b>		
SOILS 403	Soil Morphology Practicum	2
SOILS 412W	Soil Ecology	3
SOILS 450	Environmental Geographic Information Systems	3
<i>Prescribed Courses: Require a grade of C or better</i>		
SOILS 416	Soil Genesis, Classification, and Mapping	4
<b>Additional Courses</b>		
BIOL 110	Biology: Basic Concepts and Biodiversity	3-4

or BIOL 127	Introduction to Plant Biology	
FOR 475	Principles of Forest Soils Management	3
or SOILS 404	Urban Soils	
GEOSC 1	Physical Geology	3
or GEOSC 20	Planet Earth	
Select 3-4 credits from the following:		3-4
AGRO 28	Principles of Crop Management	
BIOL 220W	Biology: Populations and Communities	
FOR 203	Field Dendrology	
HORT 101	Horticultural Science	
TURF 235	The Turfgrass	
Select 3 credits from the following:		3
ERM 440	Chemistry of the Environment: Air, Water, and Soil	
SOILS 402	Soil Nutrient Behavior and Management	
SOILS 420	Remediation of Contaminated Soils	
Select 3 credits from the following:		3
GEOSC 452	Hydrogeology	
SOILS 401	Soil Composition and Physical Properties	
SOILS 405	Hydropedology	
<b>Supporting Courses and Related Areas</b>		
Select 18 credits of specialization/minor courses in consultation with adviser		18

**Water Science Option (58-60 credits)**

Code	Title	Credits
<b>Prescribed Courses</b>		
BIOL 220W	Biology: Populations and Communities	4
CED 201	Introductory Environmental and Resource Economics	3
ERM/ASM 309	Measurement & Monitoring of Hydrologic Systems	3
ERM/WFS 435	Limnology	3
ERM 447	Stream Restoration	3
ERM 450	Wetland Science and Sustainability	3
FOR 470	Watershed Management	3
<i>Prescribed Courses: Require a grade of C or better</i>		
BIOL 110	Biology: Basic Concepts and Biodiversity	4
ERM 412	Resource Systems Analysis	3
ERM 413W	Case Studies in Ecosystem Management	3
<b>Additional Courses</b>		
GEOG 160	Mapping Our Changing World	3
or GEOG 260	Geographic Information in a Changing World: Introduction to GIScience	
Select 3 credits from the following:		3
GEOSC 452	Hydrogeology	
SOILS 401	Soil Composition and Physical Properties	
SOILS 405	Hydropedology	
Select 3 credits from the following:		3
CE 370	Introduction to Environmental Engineering	
ERM 448	Rural Road Ecology and Maintenance	
ERM 449	Sustainable Water Management: Economics and Policy	
FOR 303	Herbaceous Forest Plant Identification and Ecology	

FOR 403	Invasive Forest Plants: Identification, Ecology, and Management	
SOILS 450	Environmental Geographic Information Systems	
WFS 410	General Fishery Science	
WFS 422	Ecology of Fishes	
<i>Additional Courses: Require a grade of C or better</i>		
MATH 111	Techniques of Calculus II	2-4
or MATH 141	Calculus with Analytic Geometry II	
<b>Supporting Courses and Related Areas</b>		
Select 12 credits of specialization/minor courses in consultation with adviser		12
Select 3 credits in communications/sustainability/leadership		3

**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.