

ENVIRONMENTAL INQUIRY, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

Program Requirements

Requirement	Credits
Requirements for the Minor	18-19

Requirements for the Minor

A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/>). In addition, at least six credits of the minor must be unique from the prescribed courses required by a student's major(s).

Code	Title	Credits
Additional Courses		
<i>Additional Courses: Require a grade of C or better</i>		
<i>Introductory Course</i>		
Select one of the following: ¹		3-4
AGECO 121	Plant Stress: It's Not Easy Being Green	
ANTH 45N	Cultural Diversity: A Global Perspective	
BIOL 120N		
BIOL 110	Biology: Basic Concepts and Biodiversity	
BISC 3	Environmental Science	
CED 152	Community Development Concepts and Practice	
EARTH 2	The Earth System and Global Change	
EARTH 100	Environment Earth	
EARTH 101	Natural Disasters: Hollywood vs. Reality	
EARTH 111		
EGEE/MATSE 101	Energy and the Environment	
EGEE 102	Energy Conservation for Environmental Protection	
EMSC/STS 150		
ENGL 180	Literature and the Natural World	
ENT 202		
ENVST 100		
ERM 210	Environmental Factors and Their Effect on Your Food Supply	
FDSC/STS 105	Food Facts and Fads	
GEOG 30N	Environment and Society in a Changing World	
GEOG 110		
GEOG 123		
GEOSC 21	Earth and Life: Origin and Evolution	
GEOSC 40	The Sea Around Us	
HIST/STS 151N	Technology and Society in American History	
HORT 101	Horticultural Science	

HORT 150N	Plants in the Human Context
INTAG 100	
MATSE 81	Materials in Today's World
PHIL 118	Environmental Philosophy
PLSC/STS 135	
SOC 23	Population and Policy Issues
SOILS 71	Environmental Sustainability
SOILS 101	Introductory Soil Science
WFS 209N	Wildlife and Fisheries Conservation

Cluster Selection

Select 9 credits from one of the following clusters:	9
Biodiversity and Ecosystems	
Environment and Society	
Environmental Explorations	
Ideas About the Environment	
Water Resources	
Human Settlements	
Energy Resources	

Final Course

Select one of the following: ²	3
BIOL 419	Ecological and Environmental Problem Solving
BIOL 461	Contemporary Issues in Science and Medicine
CED 410	The Global Seminar
ERM 430	Air Pollution Impacts to Terrestrial Ecosystems
GEOG 412W	Climatic Change and Variability
GEOG 430	Human Use of Environment
GEOG 436	
GEOSC 451	Natural Resources: Origins, Economics and Environmental Impact
NUTR 497	Special Topics
SOC 422	World Population Diversity
SOILS 422	Natural Resources Conservation and Community Sustainability
STS 420	Energy and Modern Society
WFS/FOR 430	Conservation Biology

Supporting Courses and Related Areas

Supporting Courses and Related Areas: Require a grade of C or better

Select one 400-level course from a cluster option other than the one you have chosen (field experience courses are encouraged) 3

¹ The introductory course offers a broad overview of a topic that relates to an environmental theme. It is designed as a preface to learn about the many disciplines and approaches used to study the environment.

² This is the capstone course of the minor which allows students to explore more deeply and recap their study within the minor's curriculum.

Cluster Course Selections

Students may not use a course from their major in their chosen cluster. In all cases/clusters, students may substitute up to 3 credits of research topics, internship, or independent studies courses focused on a relevant environmental topic in consultation with an adviser.

Biodiversity and Ecosystems

This specialization prepares a student to learn about the importance of biodiversity in ecosystems. Over the last 100 years, humans have dramatically reduced the biodiversity on the earth primarily through loss of habitat. Reducing the pressure on the world's biological resources will take political will, scientific research, and creativity in planning. A central focus is on developing effective understanding of land management practices that can enhance the prospects for biological diversity.

Code	Title	Credits
BIOL 127	Introduction to Plant Biology	3
BIOL 220W	Biology: Populations and Communities	4
BIOL 417	Invertebrate Zoology	4
BIOL 435	Ecology of Lakes and Streams	3
BIOL 448	Ecology of Plant Reproduction	3
BIOL 482	Coastal Biology	3
BIOL 499A	Tropical Field Ecology	3
CE 370	Introduction to Environmental Engineering	3
CHEM 20	Environmental Chemistry	3
CHEM 301	Environmental Chemistry and Analysis	3
CHEM 402	Environment Chemistry: Atmosphere	3
ENT 202		3
FOR 308	Forest Ecology	3
FOR 401	Urban Forest Management	3
FORT 100	Introduction to Forestry	1
GEOG 110		3
GEOG 123		3
GEOG 314	Biogeography and Global Ecology	3
GEOG 310	Introduction to Global Climatic Systems	3
GEOSC 21	Earth and Life: Origin and Evolution	3
HORT 101	Horticultural Science	3
INTAG 100		3
LARCH 245	Ecology & Plants II	3
METEO 451	Introduction to Physical Oceanography	3
PPEM 120	The Fungal Jungle: A Mycological Safari From Truffles to Slime Molds	3
SOILS 101	Introductory Soil Science	3
SOILS 412W	Soil Ecology	3
STS 201	Climate Change, Energy, and Biodiversity	3
WFS/FOR 430	Conservation Biology	3

Environment and Society

This specialization provides insights into the debates and challenges about the distribution and utilization of the world's environmental resources. All people deserve to live in a safe environment regardless of their income, skin color, religion, or gender. Yet, many of the poorest people in the world live in unsafe environmental contexts. Research in many different fields of social science, as well as ethical research, is required to understand how to promote and achieve environmental justice.

Code	Title	Credits
ANTH 456		3
CED 152	Community Development Concepts and Practice	3
CED 230	Development Issues in the Global Context	3
CED 309	Land Economics and Policy	3

CED 410	The Global Seminar	3
CED/CEDEV 430		3
CED 201	Introductory Environmental and Resource Economics	3
CED 429	Natural Resource Economics	3
CED 431		3
EARTH 101	Natural Disasters: Hollywood vs. Reality	3
ECON 428	Environmental Economics	3
EMSC 101		3
ERM 411	Legal Aspects of Resource Management	3
GEOG 124	Elements of Cultural Geography	3
GEOG 438W	Human Dimensions of a Changing Climate	3
GEOSC 109H	Earthquakes and Society	3
GEOSC 310	Earth History	4
GEOSC 402Y	Natural Disasters	3
HIST 453	American Environmental History	3
INTAG 100		3
NUTR 497	Special Topics	1-9
PHIL 132	Bioethics	3
RSOC 11	Intro Rural Sociology	3
SOC 423	Social Demography	3
SOC 450	Justice and the Environment	3
SOILS 71	Environmental Sustainability	3
STS 201	Climate Change, Energy, and Biodiversity	3
STS 420	Energy and Modern Society	3

Environmental Explorations

This specialization scrutinizes the range of debates, practices, and possibilities guiding discussions of how to achieve equitable and sustainable development. Global and national discussions are beginning to probe how we can move toward a future where resources are more effectively utilized and the environment is maintained while achieving well-being for the whole world. A cross-disciplinary approach is necessary to promote an understanding of these broad discussions.

Students must take 3 credits each of social science, natural science, and arts and humanities courses.

Code	Title	Credits
Social Science		
ANTH 40 or ANTH 146	Biocultural Evolution Indigenous North America	3
CED 201	Introductory Environmental and Resource Economics	3
CED 429	Natural Resource Economics	3
CED 431		3
CED 410	The Global Seminar	3
ECON 428	Environmental Economics	3
FDSC/PHIL 280		3
GEOSC 451	Natural Resources: Origins, Economics and Environmental Impact	3
LARCH 65	Built Environment and Culture: Examining the Modern City	3
NUTR 497	Special Topics	1-9
PLSC 412 or PLSC 420	International Political Economy State Making	3

SOC 422	World Population Diversity	3
TURF 425	Turfgrass Cultural Systems	3
Select one of the following:		3
ANTH 152	Hunters and Gatherers	
ANTH 456		
Select one of the following:		3
GEOG 20	Human Geography: An Introduction	
GEOG 333	Human Dimensions of Natural Hazards	
GEOG 430	Human Use of Environment	
Natural Science		
BIOL 220W	Biology: Populations and Communities	4
BIOL 427	Evolution	3
EARTH 106		3
EMSC 121	Minerals and Modern Society	3
ERM 300	Basic Principles and Calculations in Environmental Analysis	3
FOR 308	Forest Ecology	3
GEOG 110		3
or GEOG 115	Landforms of the World	
GEOSC 320	Geology of Climate Change	3
or GEOSC 340	Geomorphology	
METEO 4	Weather and Risk	3
PPEM 120	The Fungal Jungle: A Mycological Safari From Truffles to Slime Molds	3
WFS/FOR 430	Conservation Biology	3
or WFS 408	Mammalogy	
Select one of the following:		3
BIOL 435	Ecology of Lakes and Streams	
BIOL 436	Population Ecology and Global Climate Change	
BIOL 444	Field Ecology	
BIOL 446	Physiological Ecology	
Select one of the following:		3-5
BIOL 450		
BIOL 461	Contemporary Issues in Science and Medicine	
BIOL 499A	Tropical Field Ecology	
Select one of the following:		3
CHEM 20	Environmental Chemistry	
CHEM 301	Environmental Chemistry and Analysis	
CHEM 402	Environment Chemistry: Atmosphere	
Select one of the following:		3
GEOSC 10	Geology of the National Parks	
GEOSC 20	Planet Earth	
GEOSC 303	Introduction to Environmental Geology	
Arts and Humanities		
AMST 50		3
CED 410	The Global Seminar	3
COMM/STS 408	Cultural Foundations of Communications	3
COMM 411	Cultural Aspects of the Mass Media	3
or COMM 459	Cultural Effects of Interactive and Online Media	
EMSC/STS 150		3
ENGL 88		3
or ENGL 233N	Chemistry and Literature	

ENGL 402/404	Literature and Society	3
ENGL 430	The American Renaissance	3
FDSC/PHIL 280		3
GEOG 434	Politics of the Environment	3
or GEOSC 310	Earth History	
HIST/STS 428	The Darwinian Revolution	3
HIST 453	American Environmental History	3
LARCH 60	Cultural History of Designed Places	3
Select one of the following:		3
PHIL 13	Nature and Environment	
PHIL 132	Bioethics	
PHIL 403	Seminar in Environmental Ethics	

Ideas About the Environment

This specialization engages the philosophical and political challenges underpinning concerns of modern environmentalism. People have always contemplated the meaning of the world around them and the ways in which their reality is shaped by the environment. The meaning and value of the "environment" therefore depends on a person's range of understandings, ideas, and representations about the physical world. To operate effectively, civil society must be based on open discussions including environmental concerns, and this requires basic levels of ecological literacy.

Code	Title	Credits
AG 160	Introduction into Ethics and Issues in Agriculture	3
BIOL 419	Ecological and Environmental Problem Solving	3
BIOL 438		3
BIOL 461	Contemporary Issues in Science and Medicine	3
CED 450	International Development, Renewable Resources, and the Environment	3
ECON 428	Environmental Economics	3
EMSC/STS 150		3
ENGL 88		3
ENGL 430	The American Renaissance	3
ENVE 460		3
FDSC/PHIL 280		3
GEOG 123		3
GEOG 434	Politics of the Environment	3
HIST 110	Introduction to Global Environmental History	3
HIST/STS 428	The Darwinian Revolution	3
HIST 453	American Environmental History	3
LARCH 60	Cultural History of Designed Places	3
NUTR 497	Special Topics	1-9
PHIL 403	Seminar in Environmental Ethics	3
SOC 450	Justice and the Environment	3
SOILS 71	Environmental Sustainability	3
STS 100	Science, Technology, and Culture	3
STS 101	Modern Science, Technology, and Human values	3

Water Resources

This specialization emphasizes basic literacy required to understand the debates surrounding water as a resource and offers insights into what people can do to protect and maintain its integrity on a worldwide basis. Water and water resources are central to human life, and yet modern industrialization and human settlement patterns are creating

untenable competition for water between humans, and other flora and fauna. Basic science is required to ascertain problems of supply. Social science understanding is required to understand challenges facing water supply and utilization and the search for wise utilization of the world's water resources.

Code	Title	Credits
ASM 327	Soil and Water Resource Management	3
BE 307	Principles of Soil and Water Engineering	3
BIOL 220W	Biology: Populations and Communities	4
BIOL 435	Ecology of Lakes and Streams	3
CE 370	Introduction to Environmental Engineering	3
CE 371	Water and Wastewater Treatment	3
CE 461	Water-resource Engineering	3
CE 475	Water Quality Chemistry	4
EARTH 111		3
EMSC 440	Science Diving	4
ENVE 411	Water Supply and Pollution Control	3
ENVE 415	Hydrology	3
ERM/WFS 450	Wetland Science and Sustainability	3
FOR 470	Watershed Management	3
GEOG 431	Geography of Water Resources	3
GEOSC 40	The Sea Around Us	3
GEOSC 440	Marine Geology	3
GEOSC 452	Hydrogeology	3
METEO 451	Introduction to Physical Oceanography	3
PLANT 217	Landscape Soil and Water Management	3
WFS 422	Ecology of Fishes	3
WFS/ERM 435	Limnology	3

Human Settlements

This specialization examines human settlement patterns and their interaction with the environment. Particular emphasis is placed on patterns of development, human movement and migration patterns, as well as environmental impacts. As population increases worldwide, land is increasingly taxed beyond proper capacity. Zoning regulations, suburban sprawl, and uneven settlement that replaces fertile agricultural land have all become major issues within the policy spectrum that must be dealt with to ensure a positive future for the entire world population.

Code	Title	Credits
AMST 50		3
ANTH 45N	Cultural Diversity: A Global Perspective	3
ARCH 316	Analysis of Human Settlements: Cities	3
BIOL 120N		3
CED 230	Development Issues in the Global Context	3
CED 309	Land Economics and Policy	3
CED 409	Land Use Planning and Procedure	3
CED 431		3
COMM/STS 408	Cultural Foundations of Communications	3
COMM 411	Cultural Aspects of the Mass Media	3
EARTH 101	Natural Disasters: Hollywood vs. Reality	3
EARTH 106		3
ENGL 88		3
ENGL 402	Literature and Society	3
FDSC/PHIL 280		3

GEOG 20	Human Geography: An Introduction	3
GEOG 333	Human Dimensions of Natural Hazards	3
GEOG 436		3
GEOSC 109H	Earthquakes and Society	3
LARCH 60	Cultural History of Designed Places	3
LARCH 65	Built Environment and Culture: Examining the Modern City	3
METEO 4	Weather and Risk	3
NUTR 497	Special Topics	1-9
SOILS 71	Environmental Sustainability	3
TURF 425	Turfgrass Cultural Systems	3
WFS/ERM 450	Wetland Science and Sustainability	3

Energy Resources

This specialization offers a glimpse into the emerging technology that exists in the energy sector. As the worldwide supply of fossil fuels diminishes, and the demand for those fuels increases, new energy technology must be developed to power our planet. In recent years, energy sustainability and the use of infinite resources have been considered serious options for the first time. Thus, this cluster option employs an interdisciplinary strategy with the goal of educating individuals on a broad range of emerging technologies in relation to energy resources.

Code	Title	Credits
CED 201	Introductory Environmental and Resource Economics	3
CED 429	Natural Resource Economics	3
CED 431		3
CED 450	International Development, Renewable Resources, and the Environment	3
EGEE/MATSE 101	Energy and the Environment	3
EGEE 102	Energy Conservation for Environmental Protection	3
EGEE 401	Energy in a Changing World	3
EGEE 464W	Energy Design Project	3
EMSC 101		3
EMSC/STS 150		3
GEOSC 451	Natural Resources: Origins, Economics and Environmental Impact	3
MATSE 81	Materials in Today's World	3