

## ENVIRONMENTAL STUDIES

Katerina Middeldorp, Holland Hall 327  
507-786-3167  
middeldk@stolaf.edu  
wp.stolaf.edu/environmental-studies

Environmental studies explores the relationships between the earth's natural and physical systems, political, economic, and social systems, and human understanding of the environment as informed by ethics, philosophy, art, history, religion, and literature. The Department of Environmental Studies seeks to create a diverse and inclusive learning community that promotes an integrated understanding of humankind's relationship to the environment. It does this by encouraging rigorous study of the biological and physical processes that characterize the physical environment; critical examination of the political, economic, and social institutions that frame human interaction with the environment; and scholarly engagement with those philosophical, spiritual, literary, and artistic traditions that inform and reflect our understanding of the environment and our relationship to it.

### Overview of the Major

Interdisciplinary inquiry and creative practice enable both broad and focused perspectives on environmental issues, problems, and possible solutions. This program offers a major with three areas of emphasis through which students choose to focus their work: the natural sciences, the social sciences, and the arts and humanities. In many cases work in these areas of emphasis overlaps with traditional departmental curricula, and students choose to complete a second major there. Recognizing the global and local dimensions of numerous environmental challenges and the need for learning outside of the classroom, the program provides a number of opportunities for studies abroad and in the field.

All students majoring in environmental studies take twelve required courses. Three of those courses emphasize interdisciplinary approaches, including an introductory course that explores the interdisciplinary nature of environmental questions and lays the groundwork for the major, an intermediate level course attending to the nature of environmental inquiry and how to integrate and apply one's knowledge and skills for personal, civic and work-related roles, and a senior seminar course that challenges students to reflect on what they have learned throughout their studies and to generate a project proposal for future work. The department strongly encourages students to consider how study abroad and away experiences, internships, research, creative practice, and learning communities will contribute to knowledge of environmental systems, the relationships between humans and the environment, and to personal/professional growth.

### Intended Learning Outcomes for the Major

The department offers a concentration in environmental studies for students wishing to complement another major with a suite of courses focused on the environment.

### Intended Learning Outcomes for the Concentration

#### Study Abroad and Study Away

Students should consult with their adviser and the environmental studies chair in planning their off-campus study, and they must receive approval from the chair before counting work from study abroad or study away programs toward an environmental studies major or concentration. The programs listed below have or allow a substantial focus in environmental studies and will generally contribute to the satisfaction of environmental studies major requirements:

- Environmental Science in Australia and New Zealand (faculty-led semester St. Olaf College)
- CAPA Global Cities Internship Program (Sydney, Australia)
- CAPA Program at University of Technology Sydney (Sydney, Australia)
- DIS Study Abroad in Scandinavia (Copenhagen, Denmark)
- LSE General Course (full year, social science focus; London, UK)
- Oregon Extension
- Washington Semester (American University)
- Wilderness Field Station (Coe College)

### Requirements

#### Requirements for the Major

Code	Title	Credits
ENVST 137	Introduction to Environmental Studies	1.00
ENVST 237	Integration and Application in Environmental Studies	1.00
ENVST 399	Seminar in Environmental Studies	1.00
Nine courses in areas of emphasis:		9.00
Select six additional courses specific to the area of emphasis chosen (natural science, social science, or arts and humanities) and three additional courses from outside the selected area of emphasis. Unless permission is granted by the chair, a course may not count for more than one requirement in the major.		
<b>Total Credits</b>		<b>12</b>

*\*By completing this major, the student also satisfies the OLE Core Writing in the Major requirement.*

### Areas of Emphasis in the Environmental Studies Major

#### Natural Science

The natural science area of emphasis seeks to give students a broad exposure to the range of problems encountered by scientists working in environmental fields and the investigative tools they use, while providing a solid foundation for further study in one of the contributing disciplines. Students planning careers in environmental

science are strongly urged to consider an additional major in biology or chemistry. Nine courses are required in addition to the introductory, integration/application, and capstone courses specified above:

Code	Title	Credits
Three courses from outside your area of emphasis.		3.0
Select one or two social sciences courses from the following:		
AS/ES 277	Environmental Sustainability in Japan (study abroad)	
ECON 242	Environmental Economics	
ENVST 232	Environmental Policy and Regulation	
ENVST 235	Sustainable Development	
ENVST 281	Topics in Environmental Studies (when taught with social science focus and approved by the chair)	
or ENVST 381	Advanced Research Topics in Environmental Studies	
ES/PS 201	Topics in Global Environmental Politics	
ES/PS 276	Environmental Politics	
ID 234	Human Geography	
PSCI 221	Environmental Policy (Environmental Science in Australia and New Zealand)	
SOAN 222	Cultural Anthropology (Environmental Science in Australia and New Zealand)	
SOAN 247	Disasters	
SOAN 297	Topics (when taught as Environmental Anthropology)	
Select one or two arts and humanities courses from the following:		
ENGL 276	Literature and the Environment	
ENVST 202	The Culture of Nature	
ENVST 281	Topics in Environmental Studies (when taught with arts and humanities focus and approved by the chair)	
or ENVST 381	Advanced Research Topics in Environmental Studies	
GERM 276	Green Germany	
NORW 224	Contemporary Nordic Literature (when taught with ENVST focus)	
PHIL 257	Environmental Ethics	
REL 241	Ecology, Justice & the Christian Tradition	
Select one statistics modeling and mapping course from the following:		1.00
ENVST 255	Remote Sensing and Geographic Information Systems	
SDS 172	Statistics 1	
SDS 272	Statistics 2	
Select one intermediate chemistry course from the following:		1.00

CHEM 248 & CHEM 254	Organic Chemistry II and Synthesis Laboratory II (0.25)	
CHEM 255 & CHEM 256	Analytical Chemistry and Analytical Laboratory (0.25)	
Select one intermediate ecology course from the following:		1.00
BIO 226	Terrestrial Ecology (Environmental Science in Australia and New Zealand)	
BIO 261	Ecological Principles	
Select two environmental science courses from the following: <sup>1</sup>		2.00
BIO 224	Marine Ecology (Environmental Science in Australia and New Zealand)	
BI/ES 226	Conservation Biology	
BI/ES 228	Environmental Health	
BI/ES 286	Tropical Ecology and Sustainable Land Use in Costa Rica (study abroad)	
ENVST 123	Geophysics: Perspectives on the Dynamic Earth	
ENVST 245	Global Climate Change	
ENVST 255	Remote Sensing and Geographic Information Systems	
ENVST 281	Topics in Environmental Studies (when taught with natural science focus and approved by the chair)	
ENVST 381	Advanced Research Topics in Environmental Studies (when taught with environmental science focus and approved by the chair)	
ENVST 396	Directed Undergraduate Research	
Any course from those listed in level III.		
Select one level III course in environmental science:		1.00
BIO 371	Field Ecology	
BIO 391	Selected Topics (when taught with environmental studies focus and approved by the chair)	
CHEM 391	Selected Topics in Chemistry (when taught with environmental science focus and approved by the chair)	
ENVST 381	Advanced Research Topics in Environmental Studies (when taught with natural science focus and approved by the chair)	

**Total Credits**

**9**

1

One of these two courses must carry Environmental Studies Departmental designation.

## Social Science

The social science area of emphasis seeks to provide students with a broad exposure to the methods and models employed by social scientists working in the environmental field. In addition to the introductory, integrative/application and capstone courses (specified above), students select nine additional courses from the following groups:

Code	Title	Credits
Select three courses from outside your area of emphasis. <sup>1</sup>		3.0
Select one or two natural science courses of the following:		
BIO 224	Marine Biology (Environmental Science in Australia and New Zealand)	
BIO 226	Terrestrial Ecology (Environmental Science in Australia and New Zealand) <sup>2</sup>	
BIO 261	Ecological Principles <sup>2</sup>	
BIO 391	Selected Topics (when taught with environmental science focus and approved by the chair)	
BI/ES 226	Conservation Biology	
BI/ES 228	Environmental Health	
BI/ES 286	Tropical Ecology and Sustainable Land Use in Costa Rica (study abroad)	
CHEM 124	A Matter of the Environment with Lab	
CHEM 255 & CHEM 256	Analytical Chemistry and Analytical Laboratory (0.25)	
CHEM 391	Selected Topics in Chemistry (when taught with environmental science focus and approved by the chair)	
ENVST 123	Geophysics: Perspectives on the Dynamic Earth	
ENVST 245	Global Climate Change	
ENVST 255	Remote Sensing and Geographic Information Systems	
ENVST 281	Topics in Environmental Studies (when taught with natural science focus and approved by the chair)	
ENVST 381	Advanced Research Topics in Environmental Studies (when taught with natural science focus and approved by the chair)	
Select one or two arts and humanities courses of the following:		

ENGL 276	Literature and the Environment	
ENVST 202	The Culture of Nature	
ENVST 281	Topics in Environmental Studies (when taught with arts and humanities focus and approved by chair)	
ENVST 381	Advanced Research Topics in Environmental Studies (when taught with arts and humanities focus and approved by chair)	
GERM 276	Green Germany	
NORW 224	Topics in Contemporary Nordic Lit: Window on Society (Taught in Englis (when taught with environmental science focus)	
PHIL 257	Environmental Ethics	
Select one methodological analysis course of the following:		1.00
ECON 260	Introductory Econometrics	
ENVST 255	Remote Sensing and Geographic Information Systems	
PSCI 220	Analyzing Politics and Policies	
PSYCH 230	Research Methods in Psychology	
SOAN 371	Foundations of Social Science Research: Quantitative Methods	
SDS 172	Statistics 1	
SDS 272	Statistics 2	
Economic analysis courses:		
ECON 121	Principles of Economics (or ECON 110-ECON 120)	1.00
ECON 242	Environmental Economics	1.00
Select one environmental political policy and institutions course of the following:		1.00
ENVST 232	Environmental Policy and Regulation	
ES/PS 201	Topics in Global Environmental Politics	
ES/PS 276	Environmental Politics	
Select two social science electives of the following:		2.00
AS/ES 277	Environmental Sustainability in Japan (study abroad)	
ECON 343	Development Economics	
ENVST 232	Environmental Policy and Regulation	
ENVST 235	Sustainable Development	
ENVST 281	Topics in Environmental Studies (if taught with social science emphasis and approved by the chair)	

ENVST 381	Advanced Research Topics in Environmental Studies (if taught with social science emphasis and approved by the chair)	
ENVST 396	Directed Undergraduate Research (when taught with social science focus and approved by the chair)	
ES/PS 201	Topics in Global Environmental Politics	
ES/PS 276	Environmental Politics	
ID 234	Human Geography	
PSCI 221	Environmental Policy (Environmental Science in Australia and New Zealand)	
SOAN 222	Cultural Anthropology (Environmental Science in Australia and New Zealand)	
SOAN 247	Disasters	
SOAN 297	Topics when taught as Environmental Anthropology	
<b>Total Credits</b>		<b>9</b>

**1**

No more than two courses from one area of emphasis.

**2**

Either BIO 226 (Environmental Science in Australia) or BIO 261 can count for this requirement.

## Arts and the Humanities

The arts and humanities area of emphasis examines the ways human cultures and artistic expression interconnect with one's surroundings. In particular it explores the notion of nature as a cultural construct. This area of emphasis requires nine courses in addition to the introductory, integrative/application, and capstone courses.

Code	Title	Credits
Select three courses from outside your area of emphasis. <sup>1</sup>		3.0
Select one or two natural science courses of the following:		
BI/ES 226	Conservation Biology	
BI/ES 228	Environmental Health	
BI/ES 286	Tropical Ecology and Sustainable Land Use in Costa Rica (study abroad)	
BIO 224	Marine Biology (Environmental Science in Australia and New Zealand)	
BIO 226	Terrestrial Ecology (Environmental Science in Australia and New Zealand) <sup>2</sup>	
BIO 261	Ecological Principles <sup>2</sup>	
BIO 391	Selected Topics (when taught with environmental science focus and approved by the chair)	
CHEM 124	A Matter of the Environment with Lab	

CHEM 255 & CHEM 256	Analytical Chemistry and Analytical Laboratory (0.25)	
CHEM 391	Selected Topics in Chemistry (when taught with environmental science focus and approved by the chair)	
ENVST 123	Geophysics: Perspectives on the Dynamic Earth	
ENVST 245	Global Climate Change	
ENVST 255	Remote Sensing and Geographic Information Systems	
ENVST 281	Topics in Environmental Studies (when taught with Natural Science focus and approved by the chair)	
ENVST 381	Advanced Research Topics in Environmental Studies (when taught with Natural Science focus and approved by the chair)	
Select one or two social science courses of the following:		
AS/ES 277	Environmental Sustainability in Japan (study abroad)	
ECON 242	Environmental Economics	
ENVST 232	Environmental Policy and Regulation	
ENVST 235	Sustainable Development	
ENVST 281	Topics in Environmental Studies (when taught with social science focus and approved by the chair)	
ENVST 381	Advanced Research Topics in Environmental Studies (when taught with social science focus and approved by the chair)	
ES/PS 201	Topics in Global Environmental Politics	
ES/PS 276	Environmental Politics	
PSCI 221	Environmental Policy (Environmental Science in Australia and New Zealand)	
SOAN 222	Cultural Anthropology (Environmental Science in Australia and New Zealand)	
SOAN 247	Disasters	
Select up to five level II courses in the arts and humanities of the following:		5.00
ENGL 222	Ecocriticism and Renaissance Literature	
ENGL 276	Literature and the Environment	
ENVST 202	The Culture of Nature	
ENVST 281	Topics in Environmental Studies (when taught with arts and humanities focus and approved by the chair)	

ENVST 381	Advanced Research Topics in Environmental Studies (when taught with arts and humanities focus and approved by the chair)	
GERM 276	Green Germany	
NORW 224	Topics in Contemporary Nordic Literature (when taught with and ENVST focus)	
PHIL 257	Environmental Ethics	
Select at least one level III topics course in arts and humanities of the following:		1.00
ENVST 381	Advanced Research Topics in Environmental Studies	
Level III course in another department if taught with an environmental studies arts and humanities focus and approved by the chair		
<b>Total Credits</b>		<b>9</b>

1

No more than two courses from one area of emphasis.

2

Either BIO 226 (Environmental Science in Australia) or BIO 261 can count for this requirement.

## Requirements for the Concentration

The environmental studies concentration balances an integrated, interdisciplinary approach to the environment with the disciplinary strengths of a traditional major represented by the areas of study: natural science, social science, arts and humanities. Students may utilize environmental studies-related upper-level courses within their own discipline to complete requirements of the concentration if the courses have a significant component that addresses environmental concerns. Unless permission is granted by the chair, a course may not count for more than one requirement in the concentration. Successful completion of at least 6 courses with a grade of C or better is required.

Code	Title	Credits
ENVST 137	Introduction to Environmental Studies	1.00
ENVST 237	Integration and Application in Environmental Studies	1.00
Select one natural science course of the following:		1.00
BI/ES 226	Conservation Biology	
BI/ES 228	Environmental Health	
BI/ES 286	Tropical Ecology and Sustainable Land Use in Costa Rica (study abroad)	
BIO 224 Marine Biology (Environmental Science in Australia)		
BIO 226 Terrestrial Ecology (Environmental Science in Australia) <sup>1</sup>		
BIO 261	Ecological Principles <sup>1</sup>	
BIO 391	Selected Topics (when taught with environmental science focus and approved by chair)	
CHEM 124	A Matter of the Environment with Lab	

CHEM 255 & CHEM 256	Analytical Chemistry and Analytical Laboratory (0.25)	
CHEM 391	Selected Topics in Chemistry (when taught with environmental science focus and approved by the chair)	
ENVST 123	Geophysics: Perspectives on the Dynamic Earth	
ENVST 245	Global Climate Change	
ENVST 255	Remote Sensing and Geographic Information Systems	
ENVST 281	Topics in Environmental Studies (when taught with natural science focus and approved by the chair)	
ENVST 381	Advanced Research Topics in Environmental Studies (when taught with natural science focus and approved by the chair)	
Select one social science course of the following:		1.00
ECON 242	Environmental Economics	
ENVST 232	Environmental Policy and Regulation	
ENVST 235	Sustainable Development	
ENVST 281	Topics in Environmental Studies (when taught with social science focus and approved by the chair)	
ENVST 381	Advanced Research Topics in Environmental Studies (when taught with social science focus and approved by the chair)	
ES/PS 201	Topics in Global Environmental Politics	
ES/PS 276	Environmental Politics	
PSCI 221	Environmental Policy (Environmental Science in Australia)	
PSYCH 227	Environmental Psychology at Rocky Mountain National Park (study away)	
SOAN 222 Cultural Anthropology (Environmental Science in Australia)		
SOAN 247	Disasters	
SOAN 297 Topics when taught as Environmental Anthropology		
Select one arts and humanities course of the following:		1.00
ENGL 276	Literature and the Environment	
ENVST 202	The Culture of Nature	
ENVST 242	Contemplative Desert Ecologies (study away)	



ENVST 281	Topics in Environmental Studies (when taught with arts and humanities focus and approved by the chair)	
ENVST 381	Advanced Research Topics in Environmental Studies (when taught with arts and humanities focus and approved by the chair)	
GERM 276	Green Germany	
HIST 245	Environmental History of Latin America	
NORW 224	Topics in Contemporary Nordic Literature: A Window on Society (when taught with environmental science focus)	
PHIL 257	Environmental Ethics	
Electives: Students choose one additional environmental studies course from among those listed above for the major. This may (but need not) include the senior seminar. Elective courses from other departments must have a significant component that addresses environmental concerns, but they need not have environmental issues as their exclusive focus. For some electives, students may be required to negotiate specific assignments with the instructor and the chair to receive credit toward the concentration.		1.00

**Total Credits****6****1**

Either BIO 226 (Environmental Science in Australia) or BIO 261 can count for this requirement.

## Courses

Because of their interdisciplinary character, environmental studies courses are quite appropriate for students seeking to fulfill general education requirements. Environmental studies courses often fulfill one or more of the OLE Core requirements. Some students use the ENVST concentration to create an environmental focus to their general education experience.

## Courses

### **ENVST 123: *Geophysics: Perspectives on the Dynamic Earth***

This course considers a variety of topics in earth and environmental science. Beginning with the origin of the earth and planetary system, the course examines crustal evolution and plate tectonics, geologic resources and hazards, and the relationship of these surface phenomena to processes occurring in the earth's interior. It concludes with a study of the oceans, the atmosphere, the earth's climate system, and environmental change. Offered annually.

**Prerequisite:** proficiency in algebra and geometry.

### **ENVST 137: *Introduction to Environmental Studies***

This interdisciplinary course uses basic concepts of environmental science to explore global environmental issues. Topics are drawn from recent texts and current periodic literature, and participants will recognize many of the themes from coverage in the media. Because most environmental problems involve issues beyond the sciences, the class examines the economic, political, and ethical dimensions of environmental questions and environmental decision-making. Offered each semester. This course is equivalent to ENCON 111 and students can earn credit from only one of them.

### **ENVST 202: *The Culture of Nature***

This interdisciplinary course focuses on how the human species creatively apprehends the rest of nature and our environments and has brought our values to bear on environments for good or for ill. The course samples a variety of arts and humanities disciplines structured around a set of nature-oriented and environmental questions and themes. Students sharpen their ability to perceive the world around them in environmentally sound ways through insights offered by various art forms and thinking generated within environmental history, philosophy, religion, and cultural studies. Students undertake work that a) helps them better retain and articulate their multivalent knowledge of culture and nature; and b) challenges them to share such knowledge in a world increasingly needful of healthier connections between people, cultures and the environment. Offered annually.

### **ENVST 232: *Environmental Policy and Regulation***

This course analyzes environmental regulation in the United States with respect to its historical evolution, its ability to achieve environmental targets, its efficiency or cost-effectiveness, its distributional impact on jobs, people, and industries across the country, and its international ramifications. Offered annually.

### **ENVST 233: *Environmental Justice***

This course examines environmental issues foregrounded by questions of social justice, exploring how to combine concern for the natural world with attention to inequality and power. How do intersecting oppressions contribute to environmental crises? How do people and communities negotiate with the unequal impacts of environmental degradation? We will experiment with interdisciplinary approaches to unpack the possibilities of "environmental justice" and to engage in research and activism that is radically accountable to the environment and to other people.

### **ENVST 235: *Sustainable Development***

In this course, students examine the ethical underpinnings of the sustainable development concept; explore the interdependence of society and environment in a variety of contexts (primarily but not exclusively in "developing" countries); learn about the social factors that have led economic growth to be particularly unsustainable, especially with respect to the environment. Offered periodically.

**Prerequisite:** ENVST 137.

### **ENVST 237: *Integration and Application in Environmental Studies***

Framed by a focus on a contemporary environmental topic, the course attends to the nature of environmental inquiry, one's perspectives and values, and how to use one's knowledge and skills for personal, civic and work-related roles. Individual and team projects connected to community needs teach students how to think and work across the department's three areas of emphasis in an experiential learning framework. Offered each semester.

**Prerequisite:** ENVST 137, at least one course in two of the three areas of emphasis, and a declared environmental studies major or concentration.

**ENVST 238: *Biophilia***

If love makes the world go 'round might it also play a role in restoring it? In the present ecological age, human practices are changing environments in unprecedented ways. This course explores whether -and if so how- a love of nature can promote shared planetary health. Students consider the working Biophilia Hypothesis and ways connection with other-than-human life fosters human flourishing through focused study on childhood and human development, design, and the built environment. This course fulfills an Environmental Studies elective.

**Prerequisite:** ENVST 137 or ENCON 111.

**ENVST 242: *Contemplative Desert Ecologies (study away)***

The starkness of the desert has long inspired and challenged spiritual pilgrims. The Chihuahuan Desert Slopes of northern New Mexico remain a critical topos for contemplative thought and practice, while also an increasingly-vulnerable landscape. In this course students immerse within desert ecologies and explore Christian and Indigenous spiritual traditions to examine how spirituality is enriched through sustained access to the natural world and how ecological understanding is deepened through contemplative ways of being. Offered periodically during January term.

**ENVST 245: *Global Climate Change***

This course is an interdisciplinary seminar on climate throughout the earth's history, including recent changes caused by humankind. It examines the climate system in the larger framework of planetary evolution and explores evidence from the geologic record for climates of the past. Using current scientific literature, students investigate causes of climate change and consider scenarios for future climate based on models incorporating alternative global development strategies. Offered annually.

**Prerequisites:** sophomore standing; one level I biology, chemistry, or physics course or ENVST 137 strongly encouraged.

**ENVST 255: *Remote Sensing and Geographic Information Systems***

Remote sensing and GIS are increasingly used to address basic and applied questions in the environmental sciences and a host of other disciplines. Students survey available remote sensing image types and learn to process (ground-truthing, GPS, scanning, digitizing) and interpret remotely sensed images. They also learn theory and practice of geographic information systems (basic cartography and spatial statistics). Students attend lectures plus one three-hour laboratory per week. Offered annually.

**Prerequisites:** ENVST 137 or a level I course in biology, chemistry, or physics.

**ENVST 268: *Sustainable Land Use in Costa Rica (study abroad)***

Students examine several tropical socio-ecological systems, including those situated in rainforest, montane cloud forest, dry forest, coastal, agricultural and urban landscapes. They learn about the impact of human activities on these systems and about Costa Rica's various policies and management practices aimed at more sustainable land use. Students consider how each person can contribute to sustainability within their own communities, and they gain practice through hands-on community conservation efforts. Offered periodically in January term.

**Prerequisite:** ENVST 137 or ENCON 111 or permission of instructor.

**ENVST 281: *Topics in Environmental Studies***

Students study topics related to the environment. Topics vary from year to year at the discretion of the instructor. Topics may include Environment and Theology, Environmental Justice, Ecotourism, and Literature of the Poles. Class is largely discussion-based but may include a lab/fieldwork component depending on the topic. May be repeated if topic is different. Offered annually.

**ENVST 282: *Topics in Environmental Studies***

Students study topics related to the environment. Topics vary from year to year at the discretion of the instructor. Topics may include Environment and Theology, Environmental Justice, Ecotourism, and Literature of the Poles. Class is largely discussion-based but may include a lab/fieldwork component depending on the topic. May be repeated if topic is different. Offered annually.

**ENVST 294: *Academic Internship*****ENVST 298: *Independent Study*****ENVST 381: *Advanced Research Topics in Environmental Studies***

Students study topics related to the environment. Topics vary from year to year at the discretion of the instructor. Recent topics offered include Ecosystem Research, Landscape Art, Imaging Environmentalism, and Landscape and Regional Change in the Arctic.

**ENVST 394: *Academic Internship*****ENVST 396: *Directed Undergraduate Research***

This course provides a comprehensive research opportunity, including an introduction to relevant background material, technical instruction, identification of a meaningful project, and data collection. The topic is determined by the faculty member in charge of the course and may relate to their research interests. Offered based on department decision. May be offered as a 1.00 credit course or .50 credit course.

**Prerequisite:** determined by individual instructor.

**ENVST 398: *Independent Research*****ENVST 399: *Seminar in Environmental Studies***

A capstone seminar for seniors in the major, this course involves intensive study of special topics through reflective writing, student generated research projects, presentations, and a grant proposal. Topics relate to local or regional environmental issues of interest to the students, and it provides participants with opportunities to interact with alumni, government and regulatory agencies, and community groups. The work culminates in a grant proposal where students rely on the expertise gained from their environmental studies courses and work in other majors as applicable. Offered fall semester.

**Prerequisites:** ENVST 137, ENVST 237, and senior status, or permission of the environmental studies chair and instructor.

**AS/ES 277: *Environmental Sustainability in Japan (study abroad)***

Students investigate community-based approaches to environmental sustainability during this January Term course taught in Tokyo, smaller towns in the Kansai region, and at the Asian Rural Institute (ARI) in northern Japan. Students explore how ARI builds on local Japanese resources to support its mission of training rural leaders from developing countries in organic agricultural practices. Activities include field trips, discussions, and field outings, as well as hands-on participation in the daily food life at ARI. Offered periodically during January Term. Apply through Smith Center for Global Engagement.

**Prerequisites:** preference given to students with prior coursework in either Asian studies or environmental studies.

**BI/ES 226: Conservation Biology**

Conservation biology focuses on the study of biological diversity. Students examine why people should be concerned about the number and types of species on earth, what factors threaten the survival of species, and how people can conserve them. Using principles of ecology and evolution, with input from other disciplines, students gain a better understanding of the impact of humans on biodiversity and the importance of responsible environmental decision-making. Offered annually.

**Prerequisite:** One natural science course.

**BI/ES 228: Environmental Health**

Human health is affected by the biological environment, a teeming world of parasites and diseases, and the physical environment -- the water, air, and landscapes that we inhabit. Human interactions with the environment have changed rapidly, as human populations grow, travel increases, and ecosystems are altered. This course touches upon traditional environmental topics such as air and water quality and integrates newer public health challenges such as emerging diseases and food-borne illnesses. Offered periodically.

**Prerequisite:** an introductory science course.

**BI/ES 350: Biogeochemistry: Theory and Application**

The study of global change and human environmental impacts requires students to link concepts from biology, chemistry, and physics. Students investigate these links by exploring current theories in biogeochemistry, with an emphasis on understanding the feedback between physical and ecological processes and the coupling of multiple element cycles. Students attend lectures plus one three-hour lab per week. Laboratory activities focus on a practical exploration of the methods biogeochemists use, including experience with a variety of instruments. Offered periodically.

**Prerequisite:** any level II biology, chemistry, or physics course or permission of instructor.

**ES/PS 201: Topics in Global Environmental Politics**

Population growth, industrialization, and the consumption of fossil fuels have increased global environmental problems. The course examines the ways in which nation-states and/or international institutions have addressed these environmental concerns. Depending on the instructor, the focus of the course is either the environmental problems of a particular area (e.g., Latin America, Russia or Asia) or a broader global arena (e.g., international institutions and the environment). Offered alternate years.

**ES/PS 276: Environmental Politics**

Analysis of environmental policy includes the politics of agenda setting, policy selection and program implementation, and the effects of policy outcomes. Offered annually.

## Environmental Studies Courses in Other Departments

### Natural Sciences

BIO 224 Marine Biology (Environmental Science in Australia and New Zealand)

BIO 226 Terrestrial Ecology (Environmental Science in Australia and New Zealand)

BIO 253 Water in Morocco: Precious, Precarious, and Problematic (study abroad)

BIO 261 Ecological Principles

BIO 287 Island Biology in the Bahamas (study abroad)

BIO 292 Topics in Biology (when taught as Agroecology)

BIO 371 Field Ecology

BIO 391 Selected Topics (when taught with environmental focus)

CHEM 124 A Matter of the Environment with Lab

CHEM 248 Organic Chemistry II

CHEM 254 Synthesis Laboratory II (0.25)

CHEM 255 Analytical Chemistry

CHEM 256 Analytical Laboratory (0.25)

CHEM 391 Selected Topics in Chemistry (when taught as Environmental Chemistry)

SDS 172 Statistics 1

SDS 272 Statistics 2

## Social Sciences

ECON 121 Principles of Economics

ECON 242 Environmental Economics

ECON 260 Introductory Econometrics

ECON 343 Development Economics

ID 234 Human Geography

PSCI 220 Analyzing Politics and Policies

PSCI 221 Environmental Policy (Environmental Science in Australia & New Zealand)

PSYCH 230 Research Methods in Psychology

SDS 172 Statistics 1

SDS 272 Statistics 2

SOAN 222 Cultural Anthropology (Environmental Science in Australia & New Zealand)

SOAN 247 Disasters

SOAN 297 Topics in Sociology and Anthropology (when taught as Environmental Anthropology)

SOAN 371 Foundations of Social Science Research: Quantitative Methods

SOAN 373 Ethnographic Research Methods

## Arts and the Humanities

ARTS 240 Topics in the Fine Arts (when taught as The Art of Water)

ARTH 261 O'Keeffe and Arts of New Mexico (study away)

ASIAN 238 Diasporic Literature of the Pacific

ENGL 222 Ecocriticism and Renaissance Literature



ENGL 276 Literature and the Environment

ENGL 280 Topics in Genre (when taught as Nature and Naturalist Writing)

GERM 276 Green Germany

HIST 188 Topical Seminar (when taught as Arctic Passages)

HIST 397 History Research Workshop (when taught as Capitalism and Ecology in Latin America)

NORW 205 Nature in Nordic Literature and Culture (Taught in English)

PHIL 257 Environmental Ethics

REL 127 The Bible and Ecological Desire

REL 241 Ecology, Justice & the Christian Tradition

RUSSN 250 Topics in Russian Literature (Taught in English) (when taught as The Environment in Russian Literature)

SPAN 240 Politics and Environment in Puerto Rico (study abroad)

## Arts & Humanities Emphasis Plan of Study

### Environmental Studies Major - Arts & Humanities Plan of Study

This is a sample plan that meets the prescribed requirements for this major at St. Olaf. This tool is meant as a guide and does not replace working closely with the student's academic advisor.

#### Arts and Humanities Emphasis

Course	Title	Credits
<b>First Year</b>		
<b>Fall Semester</b>		
FYS 120 or WRIT 120	First-Year Seminar (or Conversation Program - ENCON) or Writing and Rhetoric	1.00
ENVST 137	Introduction to Environmental Studies (if not in the ENCON conversation program)	1.00
World Language		1.00
<b>Credits</b>		<b>3</b>
<b>January Term</b>		
ENCON 111	Big Data and Bigger Challenges (if in the ENCON program)	1.00
<b>Credits</b>		<b>1</b>
<b>Spring Semester</b>		
WRIT 120 or FYS 120	Writing and Rhetoric (or Conversation Program - ENCON) or First-Year Seminar	1.00
World Language		1.00
<b>Credits</b>		<b>2</b>
<b>Sophomore Year</b>		
<b>Fall Semester</b>		
One course from outside this area of emphasis. (one of three)		1.00
One 200-level Arts & Humanities elective course (one of five)		1.00
<b>Credits</b>		<b>2</b>
<b>Spring Semester</b>		
One course from outside this area of emphasis. (two of three)		1.00
One 200-level Arts & Humanities elective course (two of five)		1.00
<b>Credits</b>		<b>2</b>

#### Junior Year

##### Fall Semester

ENVST 237	Integration and Application in Environmental Studies	1.00
One 200-level Arts & Humanities elective course (three of five)		1.00
<b>Credits</b>		<b>2</b>

##### Spring Semester

One course from outside this area of emphasis. (three of three)		1.00
One 200-level Arts & Humanities elective course (four of five)		1.00
<b>Credits</b>		<b>2</b>

#### Senior Year

##### Fall Semester

ENVST 381	Advanced Research Topics in Environmental Studies	1.00
ENVST 399	Seminar in Environmental Studies	1.00
<b>Credits</b>		<b>2</b>

##### Spring Semester

One 200-level Arts & Humanities elective course (five of five)		
<b>Credits</b>		<b>0</b>
<b>Total Credits</b>		<b>16</b>

Students must successfully complete the equivalent of 35 St. Olaf credits through a combination of full-credit and fractional-credit courses to earn the Bachelor of Arts.

Visit the Environmental Studies department webpage for more information.

## Natural Sciences Emphasis Plan of Study

### Environmental Studies Major - Natural Sciences Emphasis Plan of Study

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Course	Title	Credits
<b>First Year</b>		
<b>Fall Semester</b>		
FYS 120 or WRIT 120	First-Year Seminar (or Conversation Program - ENCON) or Writing and Rhetoric	1.00
ENVST 137	Introduction to Environmental Studies (if not enrolled in ENCON program)	1.00
World Language		1.00
<b>Credits</b>		<b>3</b>
<b>January Term</b>		
ENCON 111	Big Data and Bigger Challenges (if enrolled in the ENCON program)	1.00
<b>Credits</b>		<b>1</b>
<b>Spring Semester</b>		
WRIT 120 or FYS 120	Writing and Rhetoric (or Conversation Program - ENCON) or First-Year Seminar	1.00
World Language		1.00
<b>Credits</b>		<b>2</b>
<b>Sophomore Year</b>		
<b>Fall Semester</b>		
One course from outside this area of emphasis. (one of three)		1.00
One statistics modeling and mapping course		1.00
<b>Credits</b>		<b>2</b>

<b>Spring Semester</b>		
One course from outside this area of emphasis. (two of three)		1.00
One intermediate ecology elective course <sup>1</sup>		1.00
<b>Credits</b>		<b>2</b>
<b>Junior Year</b>		
<b>Fall Semester</b>		
ENVST 237	Integration and Application in Environmental Studies	1.00
One environmental science elective course (one of two)		1.00
<b>Credits</b>		<b>2</b>
<b>Spring Semester</b>		
One course from outside this area of emphasis. (three of three)		1.00
One intermediate chemistry course <sup>1</sup>		1.00
<b>Credits</b>		<b>2</b>
<b>Senior Year</b>		
<b>Fall Semester</b>		
ENVST 399	Seminar in Environmental Studies	1.00
One environmental science elective course (two of two)		1.00
<b>Credits</b>		<b>2</b>
<b>Spring Semester</b>		
One 300-level environmental science course (from list)		1.00
<b>Credits</b>		<b>1</b>
<b>Total Credits</b>		<b>17</b>

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Please note that prerequisite courses in biology, chemistry and/or math may need to be taken prior to this requirement.

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# Social Sciences Emphasis Plan of Study

## Environmental Studies Major - Social Sciences Emphasis Plan of Study

This is a sample plan that meets the prescribed requirements for this major at St. Olaf. This tool is meant as a guide and does not replace working closely with the student's academic advisor.

Course	Title	Credits
<b>First Year</b>		
<b>Fall Semester</b>		
FYS 120 or WRIT 120	First-Year Seminar (or Conversation Program - ENCON) or Writing and Rhetoric	1.00
ENVST 137	Introduction to Environmental Studies (if not in the ENCON conversation program)	1.00
World Language		1.00
<b>Credits</b>		<b>3</b>
<b>January Term</b>		
ENCON 111	Big Data and Bigger Challenges (if in the ENCON program)	1.00
<b>Credits</b>		<b>1</b>
<b>Spring Semester</b>		
WRIT 120 or FYS 120	Writing and Rhetoric (or Conversation Program - ENCON) or First-Year Seminar	1.00
ECON 121	Principles of Economics	1.00

World Language		1.00
<b>Credits</b>		<b>3</b>
<b>Sophomore Year</b>		
<b>Fall Semester</b>		
One course from outside this area of emphasis (one of three)		1.00
<b>Credits</b>		<b>1</b>
<b>Spring Semester</b>		
ECON 242	Environmental Economics	1.00
One course from outside this area of emphasis (two of three)		1.00
<b>Credits</b>		<b>2</b>
<b>Junior Year</b>		
<b>Fall Semester</b>		
ENVST 237	Integration and Application in Environmental Studies	1.00
One methodological analysis course		1.00
<b>Credits</b>		<b>2</b>
<b>Spring Semester</b>		
One course from outside this area of emphasis (three of three)		1.00
One environmental political policy and institutions course		1.00
<b>Credits</b>		<b>2</b>
<b>Senior Year</b>		
<b>Fall Semester</b>		
ENVST 399	Seminar in Environmental Studies	1.00
One social science elective course (one of two)		1.00
<b>Credits</b>		<b>2</b>
<b>Spring Semester</b>		
One social science elective course (two of two)		1.00
<b>Credits</b>		<b>1</b>
<b>Total Credits</b>		<b>17</b>

Students must successfully complete the equivalent of 35 St. Olaf credits through a combination of full-credit and fractional-credit courses to earn the Bachelor of Arts.

Visit the Environmental Studies department webpage for more information.

## Faculty

**Chair, 2025-2026**  
**Kiara Jorgenson**  
Associate Professor of Environmental Studies and Religion

**Elizabeth Abraham**  
Adjunct Assistant Professor of Environmental Studies

**Diane K. Angell**  
Associate Professor of Practice in Biology  
conservation biology; ecology; evolutionary biology

**Seth I. Binder**  
Frank Gery Associate Professor of Economics and Associate Professor of Environmental Studies  
environmental and natural resource economics and policy; development economics; sustainable development

**Xochizeltzin Castañeda-Camacho**  
Assistant Professor of Environmental Studies

**Jenna M. Coughlin** (on sabbatical 2025-26)  
Associate Professor of Norwegian  
Norwegian language and culture; Nordic literature and media; ecocriticism; gender studies

**Anne M. Gothmann**

Associate Professor of Environmental Studies and Physics

**Jacob Grossman**

Assistant Professor of Biology and Environmental Studies

**Daniel J.B. Hofrenning**

Professor of Political Science and Environmental Studies

American politics; religion and politics; parties and elections; public policy

**Paul T. Jackson**

Professor of Chemistry and Environmental Studies

green chemistry; environmental chemistry; water quality; sustainability

**Juliet Patterson**

Associate Professor of Practice in English

creative writing; contemporary American poetics; hybrid literature; environmental literature

**Nicholas Reich**

Visiting Instructor of Environmental Studies

**Charles E. Umbanhowar** (on sabbatical 2025-26)

Professor of Biology and Environmental Studies; Director of Natural Lands

prairie ecology; botany; paleoecology; fire ecology; biogeochemistry

**Martha Zillig**

Visiting Assistant Professor of Mathematics, Statistics Computer Science