

ENVIRONMENTAL STUDIES

Overview and Contact Information

The study of environmental problems is inherently interdisciplinary. One cannot understand their origin, impact, or potential solutions without analyzing the behavior of natural systems, as well as their interaction with economic, political, and cultural factors. The environmental studies major provides students with an appreciation of the interdisciplinary nature of environmental issues and includes courses from the humanities, natural sciences, and social sciences. The program is concerned with the interactions between people and their environment, the effects the environment has on people, and the impact of human activities on the environment.

Contact Information

Timothy Farnham, Chair

Laurie Kamins, Academic Department Coordinator

302 Clapp Laboratory

413-538-2898

<https://www.mtholyoke.edu/acad/environmental>

Faculty

This area of study is administered by faculty members from related departments that participate in the Environmental Studies curriculum:

Douglas Amy, Professor of Politics

Jill Bubier, Majorie Fisher Professor of Environmental Studies

Steven Dunn, Professor of Geology

Martha Hoopes, Professor of Biological Sciences, Teaching Fall Only

Girma Kebede, Professor of Geography

Thomas Millette, Professor of Geography

Stan Rachootin, Professor of Biological Sciences

Lauret Savoy, Professor of Environmental Studies, On Leave 2016-2017

Alan Werner, Professor of Geology

Catherine Corson, Miller Worley Associate Professor of Environmental Studies; Leslie and Sarah Miller Director of the Center for the Environment

Timothy Farnham, Associate Professor of Environmental Studies

Michelle Markley, Associate Professor of Geology

Alexi Arango, Assistant Professor of Physics

Kate Ballantine, Assistant Professor of Environmental Studies, Teaching Spring Only

Christine DeLucia, Assistant Professor of History

Jennifer Albertine, Visiting Lecturer in Environmental Sciences

Kevin Surprise, Visiting Lecturer in Environmental Studies

Requirements for the Major

A minimum of 56 credits:

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| ENVST-100 | Introduction to Environmental Studies | 4 |
| Science course with Laboratory: All majors must take a 100-level science course with lab which positions them for the 200-level natural science core courses they will take. | | 4 |
| The Core: five Courses at the 200 Level, from the approved ENVST course lists. These must all be, if not ENVST courses, from different disciplines. Of these: | | |
| One course must be either: | | 4 |
| ENVST-200 | Environmental Science | |
| BIOL-223 | Ecology | |
| GEOL-203 | Surface Processes | |
| The second course must be another course, in a different department, from the approved Group A (natural science) list. | | 4 |
| The third course must be either: | | 4 |
| ECON-203 | Environmental Economics | |
| ENVST-210 | Political Ecology | |
| ENVST-241 | Environmental Issues | |
| The fourth course must be a Humanities course from the approved Group B (humanities and social sciences) course list. | | 4 |
| The fifth course must also be from the Group B course list, but may be either Humanities or Social Science, as long as it's from a different department. | | 4 |
| Area of Concentration: ¹ | | |
| Seven courses (28 credits) at the 200 and 300 level in an area of concentration chosen by the student. ^{1,2} | | 20-28 |
| A maximum of two of these courses may also be used to fulfill Core (Group A/Group B) 200-level requirements. ³ | | |
| All majors must complete at least three (and sometimes four) 300-level courses within their area of concentration. (The number of 300-level courses depends on the concentration's requirements, which must be met in full.) ^{4,5} | | |
| Statistics: All majors must take an additional course in statistics. Choose from: ⁶ | | 4 |
| ECON-220 | Introduction to Econometrics | |
| STAT-140 | Introduction to the Ideas and Applications of Statistics | |
| STAT-240 | Elementary Data Analysis and Experimental Design | |
| STAT-241 | Methods in Data Science | |
| STAT-242 | Intermediate Statistics | |
| BIOL-234 | Biostatistics | |
| Senior Seminar: All majors must complete ENVST-390 | | 4 |
| Total Credits | | 56-64 |

¹ Students must choose their concentration by advising period of the second semester of their sophomore year

² Lists of the specific courses required for each concentration are available from the environmental studies department office or website, or from any member of the environmental studies faculty. Other courses may be substituted if approved by the student's environmental studies advisor.

³ Where appropriate and subject to advisor approval

⁴ Independent study may be substituted for one of the required 300-level courses, with approval of advisor. Independent study cannot be substituted for ENVST-390.

⁵ Note that many advanced courses have additional prerequisites that may not count toward core course credit for an environmental studies major.

⁶ Individual concentrations may have additional statistics requirements.

Additional Specifications

- Upon completing the major, students should have a solid working knowledge of those areas in the humanities, social sciences, and natural sciences that are related broadly to contemporary environmental issues. The prerequisites and intermediate courses provide necessary breadth and foundation. The advanced courses afford the opportunity to concentrate on a detailed exploration of a particular environmental topic.
- Environmental studies majors must choose an area of concentration around which to organize their advanced course work. The recommended concentrations (and advisors) are:
 - Conservation (Hoopes, Ballantine): The Conservation concentration allows students to focus on the science and policy behind conserving biodiversity and ecosystem function. (STAT-240/STAT-241/STAT-242 is required for this concentration.)
 - Ecosystem Science (Ballantine, Hoopes): Ecosystem Science is a field and lab-based interdisciplinary science concentration that examines the structure and function of terrestrial and aquatic ecosystems. (STAT-240/STAT-241/STAT-242 is required for this concentration.)
 - Environment and Development (Corson, Farnham, Kebbede): The Environment and Development concentration deepens student understanding of the relationship between global environmental issues and human well-being around the world. Courses ranging from the political economy to environmental justice offer students opportunities to explore factors that shape human-environment relations across both the industrialized world and the global South.
 - Environmental Politics, Policy, and Economics (Amy, Corson): The Environmental Politics, Policy, and Economics concentration focuses on the study of the political, economic, historical, and cultural forces that shape environmental policies. Topics include: how environmental policies are made, which interests are most powerful in determining policies, how effective those policies are, and which groups are harmed or helped by those policy decisions.
 - Geoscience (Markley, Werner): Nearly all environmental issues occur near or at the Earth's surface and involve earth materials. A Geoscience concentration introduces students to the geology associated with environmental studies issues.
 - Natural History (Rachootin, Farnham, Savoy): The narratives of the natural world. Students in this concentration study the living worlds that have been and are being evolved, and can, if they wish, connect the living world to the physical processes that shape the Earth and produced the geological record. Planetary science, geology, biology, and physical

anthropology guide these stories. Field experience is often an integral part of this endeavor.

- Nature/Culture/History (Farnham, Savoy): The Nature/Culture/History concentration allows students to explore the changing relationships between human beings and the natural world through time, using the perspectives and tools of the humanities (such as history, ethics, literature, or creative writing). Major aspects of study could include the effects of shifting cultural conceptions of nature on environmental change, how environments affect human communities, and how environments are shaped through cultural and historical change. By integrating different perspectives, students also consider the meanings and representations of "environment" in language and culture.
- Self-designed concentrations require approval by the environmental studies chair.
- Students may take up to two 200- or 300-level courses off campus (study abroad, Five Colleges, etc.). Two additional 200- or 300-level courses may be taken within the Five Colleges. All off-campus courses are subject to advisor approval.
- Environmental studies is an interdisciplinary major. Students who pursue an interdisciplinary major automatically fulfill the College's "outside the major" requirement.

Requirements for the Minor

A minimum of 20 credits:

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| ENVST-100 | Introduction to Environmental Studies | 4 |
| 8 credits from the natural sciences (Group A) above the 100 level ¹ | | 8 |
| 8 credits from the social sciences and/or humanities (Group B) ¹ | | 8 |
| Total Credits | | 20 |

¹ At least one course from Group A or Group B must be at the 300 level

Additional Specifications

- These courses should be chosen from the list of approved courses. The list is included below and is also available at the department office or website or from any member of the environmental studies faculty. Other courses may be counted toward the minor, with the approval of the environmental studies department chair.
- Courses in the same department as the student's major may not be counted towards the minor in environmental studies.

Course Advice

In addition to courses in Environmental Studies, many courses for the major and minor in environmental studies are offered by other departments. A list of courses approved for both the major and minor in environmental studies appears below. It is also available at the department office or website, or from any member of the environmental studies faculty.

Appropriate courses taken at Amherst, Hampshire, or Smith colleges or the University of Massachusetts may be counted toward the major or minor with the approval of environmental studies advisor.

Courses taken at other colleges or universities, or through accredited field studies around the world, may also be counted toward the major or minor with the approval of environmental studies advisor. See individual concentrations for recommended off-campus programs.

Selecting Initial Courses

Students interested in environmental issues should register for Introduction to Environmental Studies (ENVST-100) during their first year. This course is required for both the major and the minor in environmental studies and provides a broad overview of the field. It also gives students a good sense of how to continue their studies in the environmental field.

Other courses that are very useful for first-year students include:

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| BIOL-145 | Introductory Biology | 4 |
| or BIOL-160 | Integrated Introduction to Biology and Chemistry | |
| CHEM-101 | General Chemistry I | 4 |
| or CHEM-160 | Integrated Introduction to Biology and Chemistry | |
| GEOG-105 | World Regional Geography | 4 |
| GEOG-107 | Introduction to the Physical Environment | 4 |
| GEOL-103 | Oceanography | 4 |
| GEOL-107 | Environmental Geology | 4 |
| PHYS-100 | Foundations of Physics | 4 |
| PHYS-104 | Renewable Energy | 4 |
| PHYS-110 | Force, Motion, and Energy | 4 |
| STAT-140 | Introduction to the Ideas and Applications of Statistics | 4 |

A 100-level science course with lab is a required prerequisite for the 200-level science courses that environmental studies majors and minors must take as Group A core courses. A course in statistics—either STAT-140, STAT-240, STAT-241 or STAT-242, or ECON-220, or BIOL-234 (depending on one's concentration within the major) – is also a requirement of the major.

Intermediate Courses

Intermediate courses for the major and minor and for the student's selected concentration should be chosen from the list of courses approved by the environmental studies faculty. Other courses may be counted toward this requirement with the approval of environmental studies advisor.

Advanced Courses

All majors must complete ENVST-390, and complete the other 300-level requirements required by their concentration. Independent study (ENVST-395) may be substituted for one of the required advanced courses (though not ENVST-390), with approval of advisor.

ENVST Course Offerings

ENVST-100 Introduction to Environmental Studies

Spring. Credits: 4

This course introduces students to the field of environmental studies and to some of the scientific, historical, political, economic and cultural aspects of environmental concerns. Through interdisciplinary lenses, we explore the complexities of many issues and problems such as climate change, threats to biodiversity, and toxic environments. In addition to fostering an understanding of their origins, the course focuses on potential solutions.

Applies to requirement(s): Meets No Distribution Requirement

K. Ballantine, T. Farnham

ENVST-104 Renewable Energy

Spring. Credits: 4

We will examine the feasibility of converting the entire energy infrastructure of the US from one that is dependent on fossil fuels to one that utilizes mostly renewable sources of energy. We will examine the potential scale of energy production and the associated costs, natural resource requirements and land usage needs for both renewables, such as solar, wind and biofuel, and non-renewables, such as coal, natural gas, petroleum and nuclear. By applying extensive use of basic algebra and an elementary understanding of the physical processes underpinning each energy technology, we will arrive at a number of urgent conclusions about the challenges facing our energy infrastructure.

Crosslisted as: PHYS-104

Applies to requirement(s): Math Sciences

A. Arango

ENVST-200 Environmental Science

Fall. Credits: 4

Most of the environmental challenges we face are complex and interdisciplinary in nature. This course introduces students to the scientific principles, concepts, and methodologies required to both understand the interrelationships of the natural world, as well as to identify and analyze environmental problems and think critically about alternative solutions for addressing them. Key concepts from ecology, biogeochemistry, and other scientific fields inform our study of climate change, water resources, soil sustainability, food production, and other topics. Fundamental and emerging issues are examined using regional case studies, hands-on problem solving, and field and laboratory experiments.

Applies to requirement(s): Math Sciences

J. Albertine

Prereq: One 100-level lab science. Coreq: ENVST-200L.

Advisory: One course in statistics is recommended.

ENVST-210 Political Ecology

Fall. Credits: 4

This course will explore the historical, political, economic, social, and cultural contexts in which human-environment interactions occur. We will cover critical topics and trends in the field of political ecology, from its early manifestations to more recent expansions. Using case studies from the global south and north, we will discuss factors that shape social and environmental change across scales from the personal to the global, and we will examine the role of gender, race, class, and power in struggles over resources. Students will become familiar with the academic debates in which political ecologists are engaged, and they will apply the concepts discussed in a case of their choice.

Applies to requirement(s): Social Sciences; Multicultural Perspectives

Other Attribute(s): Writing-Intensive

K. Surprise

Restrictions: Course limited to sophomores, juniors and seniors

ENVST-233 Topics in Environmental Studies Studies

ENVST-233ET Topics in Environmental Studies: 'Environmental Ethics'

Fall. Credits: 4

A fundamental problem we face as humans is how we should relate to the natural world. Why not turn Yosemite into a parking lot? Should we control nature by applying scientific and technological expertise? Or should we strive for noninterference and preservation of the wild? How do we balance the pressing needs of people for food, energy, and other resources with the needs of other species or whole ecosystems?

Crosslisted as: PHIL-260ET

Applies to requirement(s): Humanities

A. Arden

ENVST-233PB Topics in Environmental Studies: 'Air Pollution Biology'*Spring. Credits: 4*

Humans are increasing the amount of pollutants in the environment, particularly through the burning of fossil fuels and other industrial practices. This course will investigate the pollutants that cycle through the atmosphere. Key pollutants covered will include nitrogen oxides, sulfur oxides, carbon compounds, particulate matter, mercury, and ozone. We will investigate where the pollutants come from, their presence in the environment, and the biological effects of these pollutants. This course will be largely lecture based, but group discussions of primary scientific literature and case studies will be core components. Field trip outside class time to Massachusetts Department of Environmental Protection air pollution-monitoring site.

*Applies to requirement(s): Math Sciences**J. Albertine**Prereq: 100-level Chemistry and 100-level Biological Sciences.***ENVST-237 Native American History Through 1865***Spring. Credits: 4*

This course surveys Native American history from ancient times through the U.S. Civil War, tracing the ways that tribal communities have shaped North America. Beginning with the diverse indigenous societies that inhabited the Americas millennia before Columbus's arrival, it discusses the cultural complexity of Native peoples, nations, and worldviews rooted in particular ecosystems and homelands. It moves through the early modern era of European scientific exploration and "discovery" of a New World, and the pivotal violences of the "Indian Wars" of the seventeenth, eighteenth, and early nineteenth centuries.

*Crosslisted as: HIST-235**Applies to requirement(s): Humanities; Multicultural Perspectives**C. DeLucia***ENVST-240 The Value of Nature***Fall. Credits: 4*

Through this seminar, students develop an in-depth knowledge of and articulate vocabulary for the significant and diverse ways that humans value the natural world - utilitarian, scientific, aesthetic, naturalistic, symbolic, ethical, and spiritual. We use these different typologies of human environmental values as frameworks for readings and discussion, extending our examination to historical and cultural variations in values, competing perspectives of the natural world, and other value concepts, including intrinsic and transformative value. We examine the concept of biophilia and probe the role values play in the concern over losses of biological diversity and its implications.

*Applies to requirement(s): Humanities**T. Farnham**Prereq: ENVST-100.**Notes: gateway course for minor in Conceptual Foundations of Science***ENVST-241 Environmental Issues***Spring. Credits: 4*

In this course, we will explore the different facets of numerous environmental policy issues and review the substantive aspects, legal themes, and regulatory structure of the major federal environmental laws. The laws covered in this course include the National Environmental Policy Act, the Clean Air Act, the Clean Water Act, the Endangered Species Act, and others. The course objectives are for the student to learn the basic regulatory characteristics of the major laws and to become well-versed in the current environmental issues which we will focus upon throughout the semester, such as global climate change, ocean degradation, energy resources, and biodiversity loss.

*Applies to requirement(s): Meets No Distribution Requirement**T. Farnham**Prereq: ENVST-100.***ENVST-271 Place and Power in the American West and Pacific World***Spring. Credits: 4*

The vast region of North America between the Mississippi River and Pacific Ocean has been a site of many migrations, conflicts, political transformations, and environmental changes. This course examines dynamic histories of Native American tribes, Euro-American "explorers" and colonists, cowboys and miners, Asian immigrant laborers, and mariners, all of whom helped create interior and oceanic worlds. It focuses on natural and human changes in specific locales, and also explores how public histories at these places shape the present and future.

*Crosslisted as: HIST-271**Applies to requirement(s): Humanities; Multicultural Perspectives**C. DeLucia***ENVST-295 Independent Study***Fall and Spring. Credits: 1 - 4**The department**Instructor permission required.***ENVST-301 History of Energy***Fall. Credits: 4*

We live in an age of energy crises, in which the future of energy is questioned in countless headlines and Twitter feeds. Often our energy agony accompanies other assumptions about energy's past, in particular the idea that social change invariably follows the discovery of new energy technologies. From food to fuel cells, this colloquium charts a more complicated and interesting history, a history in which people have continually shaped and made meaningful the energies that fuel the modern world. It will be of particular interest to students in history and environmental studies and to those interested in the social study of science and technology.

*Crosslisted as: HIST-301HE**Applies to requirement(s): Humanities**Other Attribute(s): Speaking-Intensive, Writing-Intensive**D. Fitz-Gibbon*

ENVST-315 Research, Ethics and Policy in Environmental Studies*Not Scheduled for This Year. Credits: 4*

Designed to promote curriculum-to-career, this hands-on course prepares students for independent research, research internships, or research careers. Student pick topics of interest and share weekly assignments. Over the course of the semester, we examine methods for designing research and for gathering and analyzing information, and we discuss using data to inform policy. We speak with Mount Holyoke alumnae who have conducted research during internships, for honors theses and independent study, or for policy institutes after graduating. Finally, we consider ethical issues, from gendered experiences to cross-cultural research, and students prepare institutional review board proposals. Students from various disciplines are welcome.

*Applies to requirement(s): Social Sciences**Other Attribute(s): Writing-Intensive**C. Corson**Prereq: 8 credits of 200 level social science or humanities courses**Notes: Meets the ES politics and policy, environment and development, and conservation concentration requirements.***ENVST-316 Restoration Ecology***Not Scheduled for This Year. Credits: 4*

A key test of our ecological knowledge is whether we can successfully apply it to create or restore ecosystems that have been damaged or destroyed. As we take on the role of restoration ecologists this semester, we will use principles and methods of ecology, conservation biology, hydrology, soil science, and related disciplines to learn about the theory, practice, and politics of ecosystem restoration. This course emphasizes fieldwork, interdisciplinary teamwork, and ecological planning to evaluate and design restoration projects in our surrounding communities and regional landscapes. On a few occasions, meetings may last until 5:05 pm so that we can go on fieldtrips that are farther from campus.

*Applies to requirement(s): Math Sciences**Other Attribute(s): Community-Based Learning**K. Ballantine**Prereq: ENVST-200 or at least 8 credits of 200 or 300-level laboratory science.***ENVST-317 Perspectives on American Environmental History***Not Scheduled for This Year. Credits: 4*

We explore the history of human-environment interactions in North America from precolonial times to the present from different cultural perspectives. How have such human activities as migration, colonization, and resource use depended on or modified the natural world? How have different cultural perceptions of and attitudes toward environment shifted through time and helped to reshape American landscapes? Case studies include ecological histories of Native America and Euro-America, slavery and land use, wilderness and conservation, and environmental racism and social justice. Our approach entails historical review of scientific studies, literature, visual records, and oral tradition.

*Crosslisted as: HIST-317**Applies to requirement(s): Humanities**Other Attribute(s): Speaking-Intensive, Writing-Intensive**L. Savoy**Instructor permission required.***ENVST-321 Conference Courses in Environmental Studies**

Selected topics in areas of environmental interest, determined by faculty expertise and student needs. Study in small groups or by individual students working with faculty.

ENVST-321CP Conference Courses in Environmental Studies: 'Political Economy of the Environment: Capitalism and Climate Change'*Spring. Credits: 4*

Can an economic system predicated on infinite growth achieve sustainability on a finite planet? This question will likely define the twenty-first century. This course aims to grapple with this paradox, examining the relationships and tensions between the globally dominant form of economy - capitalism - and global climate change. We will explore the interwoven rise of capitalism and emergence of fossil fuel energy, as well as the global expansion of capitalism and the connections between resources, economic growth, and political power. We will engage with various theoretical approaches to capitalism-environment relations, such as metabolic rift theory, the second contradiction of capitalism, and the production of nature thesis. These theories provide insight into recent forms of capitalism (i.e. neoliberalism) and the increasing degradation and commodification of the environment. We end by studying contemporary debates, examining institutions and policies seeking to manage climate change from with liberal-capitalist frameworks, the emergence of the "green economy", and the politics of climate denialism, concluding with alternatives economies and the climate justice movement. This course will provide students with theoretical knowledge and analytical skills for understanding economy-environment relationships.

*Applies to requirement(s): Social Sciences**K. Surprise**Restrictions: Course limited to sophomores, juniors and seniors***ENVST-321HC Conference Courses in Environmental Studies: 'Human Health and Climate Change'***Spring. Credits: 4*

Climate change presents a global public health problem, with serious health impacts predicted to manifest in varying ways in different parts of the world. Through this course, we will investigate these health effects which include increased respiratory and cardiovascular disease, injuries and premature deaths related to extreme heat, weather, and other disaster events, and changes in the prevalence and geographical distribution of food- and waterborne illnesses and other infectious diseases. We will critically review the literature documenting recent and current impacts and predictions for the future. We will also look at solutions in place for adapting to these changes.

*Applies to requirement(s): Math Sciences**J. Albertine**Prereq: ENVST-200.***ENVST-333 Landscape and Narrative***Not Scheduled for This Year. Credits: 4*

Different stories or narratives—whether myth, literature, maps, or scientific theory—have been created about every region or environment on Earth as human attempts to describe and understand our connections with that place. How do braided strands of human history and natural history contribute to stories we tell of the land, and to stories we tell of ourselves in the land and of relational identity? In this reading and writing seminar we will reflect on how lifeways, homeplace, and identity of an individual or a community are linked with environment or the land. We will also create written and visual narratives of our own and explore creative environmental writing in reflection and action.

*Applies to requirement(s): Humanities**Other Attribute(s): Speaking-Intensive, Writing-Intensive**L. Savoy**Restrictions: This course is open to Juniors and Seniors.**Instructor permission required.*

ENVST-335 Wetlands Ecology and Management*Spring. Credits: 4*

Although they cover ~0.6% of the earth's surface, wetlands perform more ecosystem services per hectare than any other ecosystem type. Alarming, over half of the earth's wetlands have been lost to agriculture and development. With these wetlands were also lost the valuable ecosystem functions wetlands perform. This course takes an interdisciplinary approach to examine the biogeochemical, ecological, societal, and regulatory aspects of wetland ecosystems. Group discussion of primary scientific literature, as well as independent experimental design and the writing of a research proposal are core components. Field trips will sometimes keep us until 5:05 pm, and will provide an opportunity to explore these fascinating ecosystems in person.

*Applies to requirement(s): Math Sciences**K. Ballantine**Prereq: ENVST-200 or at least 8 credits of 200- or 300-level laboratory science.***ENVST-337 Interdisciplinary Perspectives on Environment and Development***Spring. Credits: 4*

This course will engage students in interdisciplinary thinking about the dynamic relationship between environment and development. Focusing on specific case studies, we will consider complementary and contrasting perspectives about the causes of and solutions to global poverty and environmental degradation. We will examine how development theories and practices have changed over time, and we will reflect on how our assumptions shape what we "see" in specific sites, how we frame particular problems and what we suggest as solutions. The course is designed as a curriculum-to-career course in which students build practical skills for international development careers.

*Applies to requirement(s): Social Sciences**K. Surprise**Restrictions: This course is open to Juniors and Seniors.***ENVST-341 Science and Power in Environmental Governance***Not Scheduled for This Year. Credits: 4*

This course applies concepts from political ecology to study how governance, broadly defined, works in relation to the environment. Using case studies of international environmental issues, we will explore how people make decisions about the environment in a policy realm. We will discuss the role of various agents, such as governments, scientific bodies, and nongovernmental organizations, in the decision-making process. We will reflect on who has access to decisions; how scientific data is used; how environmental ideas become powerful; and how policies are legitimated. Armed with this information, we will consider how to advocate for global environmental sustainability and social equity.

*Applies to requirement(s): Social Sciences**C. Corson**Restrictions: Course limited to sophomores, juniors and seniors***ENVST-373 Nature and Gender****ENVST-373WN Nature and Gender: 'Representations of Women and Nature in American Literature (Nineteenth-Twentieth Century)'***Not Scheduled for This Year. Credits: 4*

This course will focus on portrayals of women in nineteenth through mid-twentieth century America, particularly in the context of nature and landscape. We will explore how women, often objectified in visual images of the period, appropriated established devices or developed new images and structures to represent womanhood in their own terms. Texts will include selected poetry, sketches, autobiographical essays or memoirs, short stories, novels, paintings, films, and photography.

*Crosslisted as: ENGL-373NT, GNDST-333MM**Applies to requirement(s): Humanities**L. Glasser**Restrictions: This course is open to Juniors and Seniors.**Prereq: 8 credits from the English department.**Notes: meets English department 1700-1900 requirement; meets English department seminar requirement***ENVST-390 Senior Seminar in Environmental Studies***Fall. Credits: 4*

This is the capstone course of the environmental studies major. The course explores linkages among the diversity of disciplines that contribute to the environmental studies major, illustrates how these disciplines that contribute to the environmental studies major are used in environmental decision making, enables students to inform one another's roles as environmentalists, and provides students with opportunities to develop individual and cooperative projects.

*Applies to requirement(s): Meets No Distribution Requirement**Other Attribute(s): Community-Based Learning**T. Farnham**Restrictions: This course is limited to ENVST Majors.***ENVST-395 Independent Study***Fall and Spring. Credits: 1 - 8**The department**Instructor permission required.*

Courses Approved as Core Intermediate Courses

Group A: Natural Sciences

Biological Sciences

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| BIOL-200 | Introductory Biology II: How Organisms Develop | 4 |
| BIOL-223 | Ecology | 4 |
| BIOL-226 | Evolution | 4 |
| BIOL-236TA | Topics in Biological Sciences: 'Biology of Terrestrial Arthropods' | 4 |
| BIOL-310 | Invertebrate Zoology | 4 |
| BIOL-315 | Behavioral Ecology | 4 |
| BIOL-325 | Plant Diversity and Evolution | 4 |
| BIOL-331 | Theory and Application of Conservation Biology | 4 |

Chemistry

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| CHEM-201 | General Chemistry II | 4 |
| CHEM-202 | Organic Chemistry I | 4 |

Environmental Studies

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| ENVST-200 | Environmental Science | 4 |
| ENVST-233PB | Topics in Environmental Studies: 'Air Pollution Biology' | 4 |

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| ENVST-316 | Restoration Ecology | 4 | LATAM-389 | Agrarian America: Sugar, Cotton, Coffee, Bananas, and Wheat | 4 |
| ENVST-321HC | Conference Courses in Environmental Studies: 'Human Health and Climate Change' | 4 | | | |
| ENVST-335 | Wetlands Ecology and Management | 4 | | | |
| Geography | | | Politics | | |
| GEOG-205 | Mapping and Spatial Analysis | 4 | POLIT-266 | Environmental Politics in America | 4 |
| GEOG-230 | Environmental Soil Science | 4 | Russian & Eurasian Studies | | |
| Geology | | | RES-242 | Oil and Water Don't Mix: Geopolitics, Energy, and the Environment | 4 |
| GEOL-201 | Rocks and Minerals | 4 | | | |
| GEOL-202 | History of Earth | 4 | | | |
| GEOL-211 | Uranium | 4 | | | |
| GEOL-227 | Groundwater | 4 | | | |
| GEOL-240 | Geological Resources and the Environment | 4 | | | |

Group B: Humanities and Social Sciences

Humanities

Environmental Studies

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| ENVST-233ET | Topics in Environmental Studies: 'Environmental Ethics' | 4 |
| ENVST-240 | The Value of Nature | 4 |
| ENVST-271 | Place and Power in the American West and Pacific World | 4 |
| ENVST-301 | History of Energy | 4 |
| ENVST-317 | Perspectives on American Environmental History | 4 |
| ENVST-333 | Landscape and Narrative | 4 |

History

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| HIST-256HC | Environmental History: 'The Columbian Exchange: Global Perspectives on History, Culture, and Nature, 1492 to 1914' | 4 |
| HIST-317 | Perspectives on American Environmental History | 4 |

Social Sciences

Economics

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| ECON-203 | Environmental Economics | 4 |
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Environmental Studies

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| ENVST-210 | Political Ecology | 4 |
| ENVST-237 | Native American History Through 1865 | 4 |
| ENVST-241 | Environmental Issues | 4 |
| ENVST-315 | Research, Ethics and Policy in Environmental Studies | 4 |
| ENVST-321CP | Conference Courses in Environmental Studies: 'Political Economy of the Environment: Capitalism and Climate Change' | 4 |
| ENVST-337 | Interdisciplinary Perspectives on Environment and Development | 4 |
| ENVST-341 | Science and Power in Environmental Governance | 4 |

Geography

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| GEOG-204 | Human Dimensions of Environmental Change | 4 |
| GEOG-304UP | Planning and the Environment: 'Urban and Regional Planning' | 4 |
| GEOG-313 | Third World Development | 4 |
| GEOG-319 | Africa: Problems and Prospects | 4 |

Geology

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| GEOL-326 | Seminar: Global Climate Change | 4 |
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Latin American Studies