

ENVIRONMENTAL STUDIES, B.S.

Contact

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Mission

The environmental studies program strive to increase awareness and appreciation of human connections with the rest of nature and to stimulate advocacy for sustainable behaviors. The curriculum stresses sound interdisciplinary understanding of natural sciences, social sciences, and humanities disciplines in order to explore past, present, and potential ways of living on the earth. We are concerned with environmental issues at local, regional, national, and global levels, and we especially desire to help individuals and communities practice sustainable living by means of our research, teaching, and service. Faculty and students collaborate in active and critical learning through community discourse, personal inquiry, and experiential learning. We intend that our students develop a personal aesthetic awareness of the earth and that they engage in inquiry, discovery, critical thinking, and debate that characterize the study of environmental issues.

Major Description

The environmental programs offer majors in Environmental Science, Environmental Studies, and Sustainability and Business (offered jointly with the College of Business). All three majors build upon a sound foundation in basic science, and both provide broad explorations of human interaction with the environment.

During the first two years of the Environmental Science and Environmental Studies majors, course requirements are similar. The difference between the two majors emerges during the final two years in course selection: Environmental Science emphasizes scientific aspects of environmental questions, while Environmental Studies emphasizes humanistic, social, and political aspects.

During the first year, both majors take courses in Environmental Issues, Biology, Literature, Nature and the Environment (or appropriate substitute), Political Ecology and Economic Justice. This two-semester program, called the Blue Green Learning Community (BGLC), provides an interdisciplinary framework to explore fundamental themes of environmental studies. Moreover, it develops academic, social, and affective skills necessary for successful college learning and collaborative professional work.

During the second year, students look more deeply into the nature of environmental issues by taking courses in Environment and Society, Conservation and Preservation, and Environmental Policy. In addition, the Field Methods in Conservation course teaches conservation field skills as well as data analysis and environmental communication arts. In the Environmental Sustainability Lab students apply classroom learning as they propose, research and bring about a sustainability project on the campus or in the larger community. These interdisciplinary core environmental courses ensure a broad understanding while preparing students for more advanced study.

In their third year, students in both majors take BIO 350 Ecology. In their third and fourth years, aided by a faculty advisor, students choose advanced courses according to their interests and career plans. Environmental Studies majors in the third and fourth years choose advanced courses from the following distribution groups: Conservation, Preservation and Restoration; Environmental Policy and Management; Arts, Humanities, and Values; Global Ecology and Social Justice.

The advanced courses not only stress deeper understanding but also involve problem-solving. Some courses examine the ways that human attitudes affect our environment, while other courses deal with hands-on tasks such as designing a conservation area, restoring a natural ecosystem, or considering technologies to reduce pollution. In order to ensure an intense direct experience of the natural world, the School of Marine and Environmental Programs offers a variety of field study courses. The curriculum culminates with the Senior Capstone in Sustainability in which students apply the knowledge and skills they have acquired to an in-depth study of the concept.

Philosophy

Because the study of environmental issues requires knowledge from a wide range of subjects, the program maintains a firm commitment to interdisciplinary education in our curriculum. Core courses utilize knowledge and concepts drawn from the basic sciences as well as from the humanities and social sciences. Upper-division courses investigate environmental questions through disciplines such as literature, anthropology, economics, biology, political science, geographic information systems, chemistry, physics, and ecology. Through all four years, our curriculum develops the skills necessary for dealing with environmental problems: writing, speaking, critical thinking, computing, research techniques, and media arts. The Environmental Studies Program prepares students to become informed citizens, competent professionals, and lifelong learners.

The Blue Green Learning Community

As mentioned above, all entering first-year environmental students participate in a year-long learning community focused on the fundamental themes of environmental studies. The Blue Green Learning Community integrates courses as follows: four credits of biology, three credits of literature (or an appropriate substitute), three credits of social science and three credits of environmental issues for a total of 13 credits over two semesters. This interdisciplinary approach enables students to understand more clearly the complexity of environmental issues and at the same time improve skills in critical thinking, writing, oral communication, research, and use of computers. Experiential learning activities are central.

Internships and Careers

Internships provide students with an opportunity to practice learned skills in an actual work environment with the guidance of an internship coordinator, who helps students match their interests with a work experience that might take place locally, regionally, nationally, or internationally. Internships provide career exploration and can help establish professional networks that lead to career opportunities upon graduation. The interdisciplinary nature of Environmental Studies and Environmental Science is reflected in the wide variety of careers open to graduates, such as air and water resource management, ecological restoration, education, habitat conservation, park management, toxicology, field research, journalism, environmental advocacy, environmental impact assessment, law and regulation, and environmental

health. Our graduates enter both masters and doctoral programs in several of these fields.

Double Major

It is possible for students to add a second major or a minor. Students interested in a double major should consult with their faculty advisor, who in turn will coordinate with an advisor from the second program.

Admissions

See Undergraduate Admissions (<https://catalog.une.edu/undergraduate/admissions/>) for more information.

Transfer Credit

See Undergraduate Admissions (<https://catalog.une.edu/undergraduate/admissions/>) for more information.

Financial Information

Tuition and fees for subsequent years may vary. Other expenses include books and housing. For more tuition and fee information, please consult this catalog's Financial Information (<https://catalog.une.edu/undergraduate/financial-information-undergraduate-programs/>) section.

Curricular Requirements

The faculty in UNE's three colleges offering undergraduate programs have defined health of natural ecosystems as a major theme in the Nor'easter Core Curriculum. As part of the Nor'easter Core, the environmental studies program within the School of Marine and Environmental Programs delivers courses like Introduction to Environmental Issues to all undergraduates regardless of major. UNE is one of the few in the nation to require formal instruction in the health of natural ecosystems as a requirement for graduation.

| Code | Title | Hours |
|--|---|-------|
| Nor'easter Core Requirements | | |
| Nor'easter Core Requirements (https://catalog.une.edu/undergraduate/core-curriculum/) | | 40 |
| Program Required Courses | | |
| BIO 105 & 105L | Biology I: Ecology/Evolution and Bio I: Ecology/Evolution Lab | 4 |
| BIO 106 & 106L | Biology II: Cellular/Molecular and Bio II: Cellular/Molecular Lab | 4 |
| BIO 350 & 350L | Ecology and Ecology Lab | 4 |
| BUEC 104 & BUEC 105 | Economics in Context and Economics in Context | 3 |
| or ENV 130 | Political Ecology and Economic Justice | |
| ENV 104 | Sustainability for a Healthy Planet | 3 |
| or ENV 105 | BGLC: Sustainability for a Healthy Planet | |
| ENV 124 | Lit, Nature & the Environment | 3 |
| ENV 200 | Environment and Society: A Global Perspective | 3 |
| ENV 215 | Field Methods in Conservation | 3 |
| ENV 220 | Conservation and Preservation | 3 |
| ENV 240 | Env Sustainability Lab | 2 |
| ENV 250 | Envir Policy Compar Perspect | 3 |
| ENV 499 | Senior Capstone in Envntl Studi | 3 |
| MAT 151 | Statistics for Environmental Sciences | 3 |

| | | |
|---|---------------------------------------|----------------|
| or MAT 150 | Statistics for Life Sciences | |
| One Chemistry Elective w/Lab | | 4 |
| One Environmental Science Elective ¹ | | 3-4 |
| Select one course from each of the four Distribution Groups in the list of Environmental Studies Distribution Requirements and additional credits chosen from any of the groups to total twenty 21 or more credits | | |
| ENV 295 | Environmental Internship ² | 3-12 |
| or ENV 495 | Adv. Environmental Internship | |
| Open Elective Courses (Students complete open elective credits as necessary to meet the University's 120-credit minimum for graduation. The total number of elective credits required will depend on the student's completed program, core, and other degree requirements.) | | 8 |
| Total Hours | | 120-137 |

¹ After consulting with their academic advisors, Environmental Studies majors will choose 3-4 credit hours of an upper-division science course in Environmental Science or Biology, Marine Science, Chemistry, Physics, or Animal Behavior. This course should be taken during the third or fourth year.

² Up to 12 credits of ENV 295 Environmental Internship or ENV 495 Adv. Environmental Internship Internship courses may be arranged with special permission from the Academic Director

Please note: While some courses can fulfill both core and program requirements, the credits earned do not count twice towards the minimum total required credits for the degree.

Environmental Studies Distribution Requirements List

| Code | Title | Hours |
|---|--|-------|
| Group One: Conservation, Preservation, Restoration | | |
| ENV 309 | (Sustainability and Ecological Restoration) | 3 |
| ENV 312 & 312L | Wetland Conservation & Ecology and Wetland Conserv & Ecology Lab | 4 |
| ENV 313 & 313L | Wetland Rest: Science & Policy and Wetland Rest: Science&Pol Lab | 4 |
| ENV 397 | (Topics in Environmental Studies) | 3 |
| ENV 398 | Topics ENV Studies | 3 |
| ENV 399 | Topics ENV Studies w/ Field Lab | 4 |
| Group Two: Environmental Policy and Management | | |
| BUEC 390 | Environmental Economics | 3 |
| BUEC 390 | Environmental Economics | 3 |
| ENV 321 | Environmental Communication: Expert Practices for Ecosystem Management | 3 |
| ENV 328 | (Environmental Pollution: Ecosystems, Wildlife, and Human Health) | 3 |
| ENV 357 | (Sustaining Water: Social and Global Perspectives) | 3 |
| ENV 362 | (Climate Change Adaptation) | 3 |
| ENV 397 | (Topics in Environmental Studies) | 3 |
| ENV 398 | Topics ENV Studies | 3 |
| ENV 399 | Topics ENV Studies w/ Field Lab | 4 |
| Group Three: Arts, Humanities, and Values | | |
| ENV 331 | Women and the Environment | 3 |
| ENV 333 & 333L | Nature Writers w/ Field Lab and Nature Writers Lab | 4 |

| | | |
|--|--|---|
| ENV 334 & 334L | and (Contemporary Nature Writing) | 4 |
| ENV 338 | (Environmental Topics in Popular Lyrics) | 3 |
| ENV 397 | (Topics in Environmental Studies) | 3 |
| ENV 398 | Topics ENV Studies | 3 |
| ENV 399 | Topics ENV Studies w/ Field Lab | 4 |
| Group Four: Global Ecology and Social Justice | | |
| ENV 340 | Environ Movemnts/Social Change | 3 |
| ENV 341 | Ind Eco,Con Bio/Pol of Nature | 3 |
| ENV 344 | (Environmental Ethics) | 3 |
| ENV 349 & 349L | Env, Hlth, Comm Dev E Africa and Env, Hlth, Comm Dev E Africa | 4 |
| ENV 397 | (Topics in Environmental Studies) | 3 |
| ENV 398 | Topics ENV Studies | 3 |
| ENV 399 | Topics ENV Studies w/ Field Lab | 4 |

Students wishing to pursue teacher certification in Life Science can complete a double major with Environmental Science and Middle and Secondary Education or a major in Middle and Secondary Education and a concentration in Environmental Science. For more information, see the Middle and Secondary Education catalog page. (<https://catalog.une.edu/programs/middle-secondary-education-certification-bs/>)

Students in this major can participate in the pre-health graduate school preparation tracks. (<https://catalog.une.edu/programs/science-prerequisites-health-professions/>)

Academic and Technical Standards

All courses that fulfill a degree requirement must be completed with a grade of C- or higher.

Learning Outcomes

Intellectual Flexibility

Students will possess the intellectual flexibility necessary to view environmental questions from multiple perspectives, prepared to alter their understanding as they learn new ways of understanding.

Problem Solving

Students will solve problems systematically, creatively, and reflexively, ready to assemble knowledge and formulate strategy.

Interdisciplinary

When encountering environmental problems students will assess necessary scientific concepts and data, consider likely social dynamics, and establish integral cultural contexts.

Research

When faced with questions that lie beyond their current knowledge base, students will actively research data, concepts, histories, and narratives necessary for adequate consideration of the issue.

Communication

Students will communicate with precision, effective art, and sound rhetoric in writing, in speech, and in digital media.

Values

Reflecting upon their internalized values system, students will continue to evolve an individual vision of harmonious and sustainable interaction

among humans as well as between humans and the rest of the natural world.

Knowledge

Students will have mastered foundational knowledge enabling them to make sound life decisions as well as enter a career in an environmental profession or graduate school.

Detailed Learning Outcomes

To deal with environmental issues one must understand not only scientific concepts, but also the social interactions by which humans behave and the cultural values that underlay behaviors. Therefore, our Environmental Studies and Environmental Science programs lead to learning outcomes involving many different disciplines, or ways of knowing. We have organized our more detailed learning outcomes according to the three traditional academic categories: social sciences, natural sciences, and the humanities.

Social Sciences

- Students will be able to articulate the basic structure, functions, and processes of key social systems affecting the environment.
- Students will be able to apply specific models of social system processes derived from various social science theories to explain environmental issues (including current and past conditions), and to propose future solutions to environmental problems.
- Students will be able to identify, interpret, and apply basic measures (metrics and formulae) of social system variables to assess socio-environmental conditions.
- Students will be able to articulate basic understanding of various social science theories/frameworks and how they apply to environmental issues.
- Students will be able to explain how various paradigms or world views and their implicit and explicit assumptions and values shape the viewer's perception of environmental problems and solutions.
- Students will be able to explain how perceptions of environmental problems, the problems themselves, and the proposed solutions are shaped by their historical, geographical, social, political, economic, and cultural contexts.
- Students will be able to assess/weigh ethical considerations as a component of environmental decision-making and problem-solving.

Natural Sciences

- Students will understand key concepts in the life and physical sciences and will apply them to environmental issues.
- Students will understand and apply the scientific process, as well as appreciate both the potential and limitations of the process.
- Students will be able to locate, evaluate, and synthesize information from the scientific literature.
- Students will analyze data using appropriate statistical methods and will be able to evaluate the use of statistics by others in a variety of contexts.
- Students will apply knowledge of the sciences within an interdisciplinary context in solving environmental issues such as environmental health, food, agriculture, energy, waste and pollution, climate change, population, resource management, and loss of biodiversity.
- Students will carry out an applied research project in the natural sciences.
- Students will be able to communicate science effectively through written work and oral presentations to a variety of audiences.

- Students will apply the tools commonly used in field research, particularly in the study of plants, animals, and soils and will find their way on the landscape using map, compass, and GPS technology, and use spatial analysis software such as GIS, Google Earth, and Google Maps.

Humanities

- Students will articulate historical epochs and concepts relevant to the evolution of environmental consciousness and policy.
- Students will analyze and evaluate ideological and philosophical approaches used to understand environmental relationships.
- Students will be aware of and able to analyze the potential of literature and fine arts to communicate assumptions of value about human relations with the biosphere.
- Students will articulate a coherent philosophy of the environment and consider ethical bases for responding to environmental questions.

The third- and fourth-year curriculum of the Environmental Studies/ Science majors build on the core learning outcomes through a process of intensification, adding depth and sophistication to students' learning of the concepts and skills specified above. For students majoring in Environmental Studies, the outcomes listed under "Social Sciences" and "Humanities" are emphasized, while the outcomes listed under "Natural Sciences" are emphasized for students majoring in Environmental Science.