

An interdepartmental program

Environmental Studies

Courses of Study:
Minor
Major (BA)

Objectives

The Environmental Studies Program at Brandeis University prepares students to tackle the critical environmental issues that face our world today—from global warming and pandemics to toxic exposure and conflicts over shrinking natural resources—through a broad interdisciplinary approach that integrates course work across the natural and social sciences and humanities. Several of the courses offer extensive hands-on learning through fieldwork and direct involvement in local and regional environmental issues. Individually tailored internships place students in an extensive network of government, public interest, and industry groups in the Boston area and beyond, working alongside environmental professionals in the field. Environmental studies majors also learn research, report writing, oral communication, mapping, Web site development, and problem-solving skills that equip them for their later work and studies—whether or not they pursue a career in an environmental field.

In order to help students integrate their studies, we strongly recommend that students undertake either one of the excellent approved environmental field study semester-abroad programs or that they take the Brandeis Environmental Field Semester (EFS). The EFS is a single, coherent, semester-long program consisting of four integrated courses along with substantial blocks of guided field research. EFS students gain intensive experience in the conservation and stewardship of land, using local communities as a living laboratory.

How to Become a Major or a Minor

Students can begin study in the environmental studies major or minor with virtually any course in the program (except ENVS 89a or ENVS 99a or b). We encourage students to take the interdisciplinary foundation course, AMST 20a (Environmental Issues), early on in their first or second year. In order to declare the major or minor, students should meet with the environmental studies advising head. Any member of the environmental studies faculty can provide guidance on course selection and programs and recommend an advisor.

Committee

Dan L. Perlman, Chair
(Biology)

Brian Donahue
(American Studies)

Richard Gaskins
(American Studies; Legal Studies)

Laura Goldin, Undergraduate Advising Head
(American Studies)

James Morris
(Biology)

Timothy Rose
(Chemistry)

Sara Shostak
(Sociology)

Eva Thorne
(Politics)

Requirements for the Major

Students pursuing the major in environmental studies must successfully complete thirteen courses that allow for breadth, depth, and integration of their learning along with practical skills, distributed as follows:

A. Five core courses: AMST 20a (Environmental Issues) and four courses, one from each core category listed below:

1. Economics/Law: ECON 57a (Environmental Economics), LGLS 132b (Environmental Law and Policy), or ENVS 18b (International Environmental Conflict and Collaboration).

2. Environmental History: AMST 101a (American Environmental History), AMST 105a (The Eastern Forest: Paleoecology to Policy), or AMST 106b (Food and Farming in America).

3. Ecological Sciences: BIOL 23a (Ecology) or BIOL 17b (Conservation Biology).

4. Physical Sciences: CHEM 33a (Environmental Chemistry), CHCS 3b (Solving Environmental Challenges: The Role of Chemistry), ENVS 15a (Reason to Hope: Managing the Global Commons for Peace), or ENVS 17b (Global Warming and Nuclear Winter).

Students taking introductory science courses may receive partial credit toward the major. Students may satisfy the physical sciences core requirement by taking a full-year course with lab in the following subjects: chemistry, organic chemistry, or physics.

B. Two modules in geographic information systems (GIS): HS 297f (Introduction to GIS) and HS 263f (Applied GIS) or HS 292f (GIS for Development Planners). Note that each module meets for one-half semester and yields half-course credit.

C. One capstone experience: ENVS 89a (Environmental Internship) or ENVS 97a (Senior Essay) or ENVS 99a and 99b (Senior Research and Senior Thesis). The environmental internship is strongly recommended.

D. Six electives: at least two from the social sciences/ humanities group and at least two from the natural sciences group. Students may receive credit for up to two electives toward the major for each full-year introductory science course taken with the appropriate lab. One elective credit will be granted for each full year of chemistry, organic chemistry, physics, or genetics and cell biology. These students are still required to take two social sciences/ humanities group electives and two natural sciences group electives.

E. Students who wish to be considered for departmental honors must take ENVS 99a (Senior Research) and ENVS 99b (Senior Thesis). Honors will be awarded on the basis of cumulative excellence in all courses taken in the major, including ENVS 99a and b.

Special Notes Relating to Majors

Students may double-count no more than four courses used to fulfill the environmental studies major with another major or minor.

Requirements for the Minor

Students pursuing the environmental studies minor must successfully complete six required courses, distributed as follows:

- A.** One core course: AMST 20a (Environmental Issues).
- B.** One capstone experience: ENVS 89a (Environmental Internship), ENVS 97a (Senior Essay), or an approved senior honors thesis submitted to any department. The environmental internship is strongly recommended.
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C. Two elective courses from the social sciences/humanities group.

D. Two elective courses from the natural sciences group.

Off-Campus Study Opportunities

1. Courses from approved semester programs such as the School for Field Studies, SIT, and the Wood's Hole Semester in Environmental Science can be applied to electives for the major or minor with approval from the undergraduate advising head.

2. Brandeis students may also enroll in courses with the Marine Studies Consortium (MSC). Course offerings are listed below. Students taking MSC courses through cross-registration at Brandeis must pay MSC through their home institution.

Courses of Instruction

(1–99) Primarily for Undergraduate Students

ENVS 11b Water Resources Management and Policy

Offered under the auspices of the MSC and open to Brandeis students by petition. Please see the special note in printed Bulletin on off-campus courses.
An advanced interdisciplinary seminar examining past and current water supply issues and exploring the uncertain future of our water supply. The Boston metropolitan area water supply system is used as a case study. Water is looked at from scientific, historical, and political viewpoints. Usually offered every year.
Mr. Donahue (Brandeis coordinator)

ENVS 12b Introduction to Marine Mammals [sn]

Prerequisite: A college-level biology course. Offered under the auspices of the MSC and open to Brandeis students by petition. Please see the special note in printed Bulletin on off-campus courses.
Designed to familiarize students with the biology and natural history of marine mammals, with an emphasis on whales, dolphins, and seals of the western North Atlantic. Topics include evolution, anatomy, behavior, field identification, the history of whaling, and contemporary conservation issues. Usually offered every second year.
Mr. D.L. Perlman (Brandeis coordinator)

ENVS 13b Coastal Zone Management

Offered under the auspices of the MSC and open to Brandeis students by petition. Please see the special note in printed Bulletin on off-campus courses.
Introduction to the coastal environment, its resources, and its uses; impact of human activities; scope of the Federal Coastal Zone Management Act; collaborative planning efforts by federal, state, and local governments; and international applications of coastal management. Course includes case studies, guest speakers, and student presentations. Usually offered every year.
Mr. Donahue (Brandeis coordinator)

ENVS 14b The Maritime History of New England

Offered under the auspices of the MSC and open to Brandeis students by petition. Please see the special note in printed Bulletin on off-campus courses.
The sea has shaped New England. Surveys the sea's legacy from the earliest Indian fishery to the shipbuilding and commerce of today. Examines historical, political, and economic developments. Particular attention is given to insights gleaned from the investigation of shipwrecks, time capsules of discrete moments from New England's past. Classes will include visits to museums, a field session at a maritime archaeology site, and guest lectures on current research projects. Usually offered every year.
Mr. Donahue (Brandeis coordinator)

ENVS 15a Reason to Hope: Managing the Global Commons for Peace [sn]

Explores global security arrangements that would tend toward peace within the objective constraints that delimit our options; the laws of physics, energy and food availability, human population, global wealth, geography, weather, and the presence of nuclear weapons. Usually offered every year.
Mr. Tsipis

ENVS 17b Global Warming and Nuclear Winter [sn]

Prerequisite: high school–level math and science course work.
Global climate change is the biggest challenge now facing the planet, equal to the nuclear war threat of the past half-century. This course examines the characteristics of these two major threats and looks for possible responses to climate change. Usually offered every year.
Mr. Tsipis

ENVS 18b International Environmental Conflict and Collaboration [ss]

A study of the development of international environmental law and policy through a historical lens. Examines how early diplomatic initiatives have—and importantly, have not—shaped the contemporary structure of international environmental relations. Usually offered every year.
Mr. Chester

ENVS 28a Wetlands: Hydrology, Ecology, Restoration [sn]

Prerequisite: Two semesters of introductory science (biology or chemistry or physics). Offered under the auspices of the MSC and open to Brandeis students by petition.
Role of wetlands in the global landscape. Functioning of inland and coastal marshes and flood plains; water and nutrients cycles, biodiversity of organisms from microbes to vertebrates. Biological links between wetlands and human activities. Protection and restoration of endangered wetlands. Usually offered every second year.
Messrs. Klein and Waterman

ENVS 89a Environmental Internship

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The environmental studies internship provides the opportunity for students to experience firsthand actual environmental challenges in government, industry, public interest organizations, and scientific research institutions. Students tackle current environmental issues alongside professionals in the environmental field, experiencing the real-life context and application of their course work. Weekly discussion groups and assignments provide perspective and a substantive basis for the internship experience, and students present their work at the semiannual Environmental Internship Symposium. Internship placements are individually tailored to support each student's academic goals and experience. Usually offered every semester and in the Summer School.
Ms. Goldin

ENVS 97a Senior Essay

Usually offered every year.
Staff

ENVS 99a Senior Research

Usually offered every fall semester.
Staff

ENVS 99b Senior Thesis

Prerequisite: ENVS 99a.

Usually offered every spring semester.
Staff

Required Core Course for the Major and Minor**AMST 20a**

Environmental Issues

Electives**Social Science/Humanities Group****AMST 101a**

American Environmental History

AMST 102a

Women, the Environment, and Social Justice

AMST 104b

Boston and Its Suburbs: Environment and History

AMST 105a

The Eastern Forest: Paleocology to Policy

AMST 106b

Food and Farming in America

AMST 191b

Greening the Ivory Tower: Researching and Improving the Brandeis Environment

ANTH 55a

Anthropology of Development

ECON 57a

Environmental Economics

ECON 175a

Introduction to the Economics of Development

ENG 28a

Nature Writing

ENVS 11b

Water Resources Management and Policy

ENVS 13b

Coastal Zone Management

ENVS 14b

The Maritime History of New England

ENVS 18b

International Environmental Conflict and Collaboration

HIST 100a

Fire and Ice: An Ecological Approach to World History

HS 263f

Applied Geographic Information Systems (GIS)

HS 292f

Geographic Information Systems for Development Planners

HS 297f

Introduction to Geographic Information Systems

LGLS 132b

Environmental Law and Policy

PHIL 21a

Environmental Ethics

POL 180b

Sustaining Development

SOC 175b

Civic Environmentalism

SOC 193a

Environment, Health, and Society

Natural Sciences Group

Please note that some courses in this group have multiple prerequisites.

BIOL 17b

Conservation Biology

BIOL 23a

Ecology

BIOL 28a

Marine Biology

BIOL 30b

Biology of Whales

BIOL 31b

Biology of Fishes

BIOL 32a

Field Biology

BIOL 60b

Evolution

BIOL 134b

Tropical Ecology

BISC 2a

Human Reproduction, Population Explosion, Global Consequences

BISC 3b

Humans and the Environment

BISC 6b

Environmental Health

CHEM 33a

Environmental Chemistry

CHSC 3b

Solving Environmental Challenges: The Role of Chemistry

ENVS 12b

Introduction to Marine Mammals

ENVS 15a

Reason to Hope: Managing the Global Commons for Peace

ENVS 17b

Global Warming and Nuclear Winter

ENVS 28a

Wetlands: Hydrology, Ecology, Restoration