Environmental Studies

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Environmental Studies offers the opportunity to examine human relations with their environments from diverse perspectives. The major encourages interdisciplinary study in (1) social sciences, including anthropology, political science, law, economics, and ethics; (2) humanities, to include history, literature, religion, and the arts; and (3) natural sciences, such as biology, ecology, human health, geology, and chemistry. Students work with faculty advisers and the director of undergraduate studies (DUS) to concentrate on some of the most pressing environmental and sustainability problems of our time: energy and climate change, food and agriculture, urbanism, biodiversity and conservation, human health, sustainable natural resource management, justice, markets, and governance.

Students may pursue either a B.A. or a B.S. degree within Environmental Studies. The B.A. program is intended for students who wish to concentrate in the social sciences and humanities. The B.S. program encourages students to focus in the natural sciences, especially fields such as environmental health and medicine, ecology, and energy and climate change. Both degree programs culminate in a senior essay project that is commonly preceded by independent summer research.

PREREQUISITES

The B.A. degree program has no prerequisites.

The B.S. degree program requires a natural science laboratory or field course focusing on research and analytic methods, and a term course in mathematics, physics, or statistics selected from MATH 112 or higher (excluding MATH 190), or PHYS 170 or higher, or S&DS 101 or higher; two-term lecture sequence in chemistry (or CHEM 170 or CHEM 167), and either the two-term Biology introductory sequence BIOL 101, 102, 103 and 104, or G&G 125.

Students are advised to take chemistry and biology during the first year before enrolling in the EVST core courses in the natural sciences. It is recommended that students complete the prerequisites by the end of their sophomore year, although this is not required.

REQUIREMENTS OF THE MAJOR

B.A. degree program The B.A. degree requires at least thirteen course credits, consisting of the core requirements, the concentration, and the senior requirement.

B.S. degree program In addition to the prerequisites, the B.S. degree requires at least twelve course credits, consisting of the core requirements, the concentration, and the two-term senior requirement.

B.A. core courses One course in statistics or mathematics selected from S&DS 101 or higher, or MATH 112 or higher; two core courses in the social sciences or humanities and three core courses in the natural sciences. Students may select core courses from among the list of approved core courses posted on the environmental studies website. Completing one course in each core area is recommended before the end of the sophomore year.

B.S. core courses Two core courses in the humanities or social sciences and two natural science core courses from among the list of approved core courses posted on the environmental studies website. Completing one course in each area is recommended before the end of the sophomore year.

Areas of concentration Students plan their concentration in consultation with the DUS and the student’s adviser. A concentration is defined as six courses that provide analytical depth in a particular environmental problem or issue of interest, as well as disciplinary expertise. For the B.A. degree, one of these six courses must be an advanced seminar (200 level or higher) that exposes students to primary literature, extensive writing requirements, and experience with research methods. For the B.S. degree, three of the six courses must have the science (SC) designation, and two must provide interdisciplinary context to the concentration. Concentrations include biodiversity and conservation, climate change and energy, environmental humanities, environmental justice, environmental policy, food and agriculture, human health and environment, sustainability and natural resources, and urban environments. Students also have the opportunity to design a unique concentration within the major, in consultation with the DUS.

Credit/D/Fail No course taken Credit/D/Fail may be counted toward the major, including prerequisites.

Roadmap See visual roadmap of the requirements.

SENIOR REQUIREMENT

In the junior year, all students consult with their advisers on the design of their project and submit a preliminary plan to the DUS for approval.

B.A. degree program For the B.A. degree, students most often complete one term of EVST 496, a colloquium in which they write their senior essay. Students writing the one-term essay must also complete an additional advanced seminar in the environment. Two-term senior research projects require the permission of the DUS.

B.S. degree program For the B.S. degree, students complete two terms of EVST 496.
ADVISING AND APPLICATION TO THE MAJOR

Students typically apply to enter the major during their sophomore year. Applications are accepted throughout the year; details can be found on the program website. Juniors who have already completed considerable course work toward the major may also apply.

Summer Environmental Fellowship During the spring term, EVST majors may apply for the Summer Environmental Fellowship to gain experience in the field through research or internships in an area pertinent to their academic development or their senior essay project. Sophomores and juniors may arrange internships with nonprofit organizations, government agencies, or corporations. Rising seniors typically focus on research for their senior essay. Although the summer program is optional, many students take advantage of this opportunity with some financial support from the program.

REQUIREMENTS OF THE MAJOR

Prerequisites B.A.—no prerequisites; B.S.—one natural science lab or field course focusing on research and analytic methods; one math, or physics course from MATH 112 or higher (excluding MATH 190), or PHYS 170 or higher, or S&DS 101 or higher; two-term lecture sequence in Chemistry, or CHEM 170 or 167; and either the two-term Biology introductory sequence BIOL 101, 102, 103 and 104, or G&G 125

Number of courses B.A.—at least 13 course credits, incl senior project; B.S.—at least 12 course credits, beyond prereqs and incl senior project

Specific courses required B.A.—6 core courses, as specified; B.S.—2 core courses in humanities and social sciences and 2 core courses in natural sciences, as specified

Distribution of courses B.A.—6 courses in area of concentration, including 1 advanced sem as specified; B.S.—6 courses in area of concentration, 3 of which must have SC designation, and 2 must provide interdisciplinary context as specified

Senior requirement B.A.—one term senior essay and an advanced seminar in the environment or, with petition to the DUS before the end of the junior year, a two-term research project; B.S.—two-term research project

Environmental Studies offers an interdisciplinary approach to the complex relationships between humans and the natural and built environment. The Environmental Studies curriculum includes the natural and social sciences, as well as the humanities. Earth and life sciences provide the means to observe and assess environmental change. Social sciences such as anthropology, political science, and economics enable students to examine how human societies shape environments, and the ways that environmental factors influence communities, governments, and social institutions. The humanities—including history, literature, ethics, religion, and the fine arts—allow students to consider the origins and influence of human values and practices, and the ways that nature has been perceived, depicted, and incorporated into culture.

Environmental Studies students may elect to pursue either a B.A. or a B.S. degree. The B.A. program is intended for those students interested in an interdisciplinary exploration of environmental issues. The B.S. program is designed for students who want to pursue training in interdisciplinary environmental science. Both programs require students to identify a thematic concentration defined as six courses that provide analytical depth in a particular environmental problem or issue of interest, as well as disciplinary expertise.

Common concentrations within the major include: biodiversity and conservation, climate change and energy, environmental humanities, environmental justice, environmental policy, food and agriculture, human health and environment, sustainability and natural resources, and urban environments. Students can also work with the director of undergraduate studies (DUS) to design their own unique concentration.

Environmental Studies is particularly rewarding for students with a passion for environmental issues who wish to study environmental problems and solutions in an interdisciplinary manner. Students frequently undertake research and internships during the summer with support from the Summer Environmental Fellowship.

Environmental Studies majors also conduct substantial independent research, which culminates in a rewarding senior essay. Students considering the Environmental Studies major should complete the science prerequisites as early as possible in their Yale career, ideally before the end of the sophomore year. Admission to the Environmental Studies major is by application during the sophomore year. For more detailed information about Environmental Studies prerequisites, as well as requirements for both the B.A. and B.S. degrees, please see the Environmental Studies website.

First-year students interested in the major are encouraged to consult with the DUS to learn more about the major.

FACULTY ASSOCIATED WITH THE PROGRAM OF ENVIRONMENTAL STUDIES

Professors Mark Ashton (Forestry & Environmental Studies), Michelle Bell (Forestry & Environmental Studies), Gaboury Benoit (Forestry & Environmental Studies), Graeme Berlyn (Forestry & Environmental Studies), Ned Blackhawk (History and American Studies), Mark Bradford (Forestry & Environmental Studies), Derek Briggs (Geology & Geophysics), Gary Brudvig (Chemistry, Molecular Biophysics & Biochemistry), Benjamin Cashore (Forestry & Environmental Studies), Susan Clark (Adjunct) (Forestry & Environmental Studies), Deborah Coen (History), Michael Donoghue (Ecology & Evolutionary Biology, Forestry & Environmental Studies), Michael Dove (Forestry & Environmental Studies, Anthropology), Menachem Elimelech (Chemical & Environmental Engineering), Daniel Esty (Forestry & Environmental Studies), Eduardo Fernandez-Duque (Forestry & Environmental Studies), Walter Jetz (Ecology and Evolutionary Biology, Forestry and Environmental Studies), Ben Kiernan (History), Matthew Kotchen (Forestry & Environmental Studies, Economics), William Lauenroth (Forestry & Environmental Studies), Xuhui Lee (Forestry & Environmental Studies), Robert Mendelsohn (Forestry &
Environmental Studies, Economics), Alan Mikhail (History), Jeffrey Park (Geology & Geophysics), Peter Perdue (History), Stephen Pitti (History and of American Studies), Alan Plattus (Architecture), David Post (Ecology & Evolutionary Biology), Jeffrey Powell (Ecology & Evolutionary Biology, Forestry & Environmental Studies), Daniel Prober (Physics, Physics & Electrical Engineering), Peter Raymond (Forestry & Environmental Studies), Susan Rose-Ackerman (Law), Paul Sabin (History), James Saiers (Forestry & Environmental Studies), Oswald Schmitz (Forestry & Environmental Studies, Ecology & Evolutionary Biology), James Scott (Political Science, Anthropology), Karen Seto (Forestry & Environmental Studies), Kalyanakrishnan Sivaramakrishnan (Anthropology, Forestry & Environmental Studies), David Skelly (Forestry & Environmental Studies, Ecology & Evolutionary Biology), Brian Skinner (Geology & Geophysics), Ronald Smith (Geology & Geophysics, Forestry & Environmental Studies), Stephen Stearns (Ecology & Evolutionary Biology), Peter Swenson (Political Science, Institution for Social and Policy Studies), Charles Tomlin (Forestry & Environmental Studies) (Visiting), John Wargo (Forestry & Environmental Studies, Political Science), John Warner (History of Medicine, American Studies, History), Michael Warner (English, American Studies), Harvey Weiss (Near Eastern Languages & Civilizations, Anthropology), Robert Wyman (Molecular, Cellular, & Developmental Biology), Carl Zimmer (Molecular Biophysics and Biochemistry, Adjunct) Julie Zimmerman (Chemical & Environmental Engineering)

**Associate Professors** Laura Barraclough (American Studies), Craig Brodersen (Forestry & Environmental Studies), Marian Chertow (Forestry & Environmental Studies), Elihu Rubin (Architecture), Carla Staver (Ecology and Evolutionary Biology), David Vasseur (Ecology & Evolutionary Biology)

**Assistant Professors** Anjelica Gonzalez (Biomedical Engineering), William Rankin (History, History of Science)

**Senior Lecturers** Shimon Anisfeld, Carol Carpenter, Amity Doolittle, John Grim, Mary Evelyn Tucker, Marta Wells

**Lecturers** Alan Burdick, Surjit Chandhoke, Ian Cheney, Mary Beth Decker, Marlyse Duguid, Michael Fotos, Kealoha Freidenburg, Gordon Geballe, Linda Puth, Catherine Skinner

View Courses