Environmental Studies

Directors of undergraduate studies: Michael Fotos (michael.fotos@yale.edu) for B.A. students, Kealoha Freidenburg (kealoha.freidenburg@yale.edu) for B.S. students; www.yale.edu/evst

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 directors 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 is intended for students interested in the natural sciences, especially fields such as environmental health and medicine, ecology, energy and climate change. Both degree programs culminate in a senior essay project that is commonly preceded by independent summer research.

Students must declare a major in Environmental Studies before the end of the second term of junior year.

PREREQUISITES

The B.A. degree program has no prerequisites.

The B.S. degree program has prerequisites in mathematics, chemistry, life sciences, and a natural science lab. The prerequisites include a term course in mathematics, physics, or statistics selected from MATH 1120 or higher, or PHYS 1700 or higher, or S&DS 1000 or higher, or completion of the Certificate in Data Science; the two-term lecture sequence in chemistry or, for students qualifying for advanced placement in chemistry, one term of CHEM 1670 or higher; the two-credit BIOL sequence BIOL 1010, 1020, 1030 and 1040, or EPS 1250; and a natural science lab* such as those listed on the environmental studies website or by searching Yale Course Search (YC EVST BS Natural Sci Lab).

*Students who have taken approved field science courses in Spring 2023 may substitute one such course for the natural science lab prerequisite.

Students in the B.S. program 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 but not required that students complete the prerequisites by the end of their sophomore year.

REQUIREMENTS OF THE MAJOR

See Links to the attributes indicating courses approved for Environmental Science major requirements.

B.A. degree program The B.A. degree requires at least fourteen 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 1000 or higher, MATH 1100 and MATH 1110 or MATH 1120 or higher; two core courses in the humanities or social sciences and three core courses in the natural sciences. Students who complete the Certificate in Data Science are relieved of the statistics and mathematics core course requirement. Students may select core courses from among the list of approved core courses posted on the environmental studies website or by searching Yale Course Search (YC EVST Core BA Natural Scie and YC EVST Core Human/Social Sci). Completing one course in each core area before the end of the sophomore year is recommended.

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 or by searching Yale Course Search (YC EVST Core BS Natural Sci and YC EVST Core Human/Social Sci). Completing one course in each area before the end of the sophomore year is recommended.

Areas of concentration Students plan their concentration in consultation with the DUS. 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 (YC EVST Advanced Seminar) that exposes students to primary literature, extensive writing requirements, and experience with research methods. For the B.S. degree, two of the six courses must provide interdisciplinary context to the concentration and three of the six courses must have the science (SC) distributional designation. Of the three SC-designated concentration courses in the B.S. degree program, at least two must have departmental numerical ratings of 1250 or higher. 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 can design a unique concentration within the major, in consultation with the DUS.

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

Outside credit Courses taken at another institution or during an approved summer or term-time study abroad program may count toward the major requirements with DUS approval.

SENIOR REQUIREMENT

B.A. degree program For the B.A. degree, students most often complete one term of EVST 4960, 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. The additional advanced seminar is in addition to the six-course concentration

requirement. Two-term senior research projects require the permission of the DUS before the end of the second term of the junior year.

B.S. degree program For the B.S. degree, students complete two terms of EVST 4960.

ADVISING

Summer Environmental Fellowship During the spring term, EVST majors may apply for the Summer Environmental Fellowship (SEF) 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. You can find a list of past SEF awards on the Environmental Studies website.

SUMMARY OF MAJOR REQUIREMENTS

Prerequisites *B.A.*—no prerequisites; *B.S.*— one statistics, math, or physics course from MATH 1120 or higher, or PHYS 1700 or higher, or S&DS 1000 or higher, or completion of the Certificate in Data Science; two-term lecture sequence in chemistry, or CHEM 1670 or higher; BIOL 1010, 1020, 1030 and 1040, or EPS 1250; and one natural science lab

Number of courses *B.A.*—at least 14 course credits, including the senior req; *B.S.*—at least 12 course credits, beyond prereqs and incl the senior req

Distribution of courses *B.A.*—6 core courses, as specified; 6 courses in area of concentration, including 1 adv seminar as specified; *B.S.*—2 core courses in humanities and social sciences and 2 core courses in natural sciences, as specified; 6 courses in area of concentration, 3 of which must have SC designation with 2 of the 3 numerically rated at 1250 or higher, and 2 must provide interdisciplinary context as specified

Senior requirement *B.A.*—one-term senior essay, EVST 4960 and an adv 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, EVST 4960

FACULTY ASSOCIATED WITH THE PROGRAM OF ENVIRONMENTAL STUDIES

Professors Mark Ashton (*School of the Environment*), Michelle Bell (*School of the Environment*), Gaboury Benoit (*School of the Environment*), Ned Blackhawk (*History and American Studies*), Mark Bradford (*School of the Environment*), Derek Briggs (*Earth and Planetary Sciences*), Gary Brudvig *(Chemistry, Molecular Biophysics and Biochemistry)*, Ingrid Burke (*School of the Environment*), Susan Clark (*School of the Environment, Adjunct*), Deborah Coen (*History*), Michael Donoghue (*Ecology and Evolutionary Biology, School of the Environment*), Michael Dove (*School of the Environment, Anthropology*), Robert Dubrow *(School of Public Health)*, Anna Dyson *(Architecture, School of Environment)*, Keller Easterling (*Architecture*), Menachem Elimelech (*Chemical Engineering, Environmental Engineering*), Daniel Esty (*School of the Environment, Law School*), Eduardo Fernandez-Duque (*School of the Environment*), Walter Jetz (*Ecology and Evolutionary Biology, School of the Environment*), Ben Kiernan (*History*), Matthew Kotchen (*School of the Environment*, *Economics*), Douglas Kysar (*Law School*), William Lauenroth (*School of the Environment*), Xuhui Lee (*School of the Environment*), Robert Mendelsohn (*School of the Environment, Economics*), Alan Mikhail (*History*), Jeffrey Park (*Earth and Planetary Sciences*), Peter Perdue (*History*), Stephen Pitti (*History, American*

Studies), Alan Plattus (*Architecture*), David Post (*Ecology and Evolutionary Biology*), Jeffrey Powell (*Ecology and Evolutionary Biology, School of the Environment*), Daniel Prober (*Applied Physics, Electrical Engineering, and Physics),* Peter Raymond (*School of the Environment*), Paul Sabin (*History*), James Saiers *(School of the Environment),* Oswald Schmitz (*School of the Environment, Ecology and Evolutionary Biology*), Karen Seto (*School of the Environment*), Kalyanakrishnan Sivaramakrishnan (*Anthropology, School of the Environment*), David Skelly (*School of the Environment, Ecology and Evolutionary Biology*), Stephen Stearns (*Ecology and Evolutionary Biology*), Dorceta Taylor (*School of the Environment*), Gerald Torres (*School of the Environmen*t, *Law*), Paul Turner *(Ecology and Evolutionary Biology),* John Wargo (*School of the Environment*), John Warner (*History of Medicine, American Studies, History*), Michael Warner (*English, American Studies*), Harvey Weiss (*Near Eastern Languages and Civilizations, Anthropology*), Carl Zimmer (*Molecular Biophysics and Biochemistry, Adjunct*) Julie Zimmerman (*Chemical Engineering, Environmental Engineering*)

Associate Professors Laura Barraclough (*American Studies*), Craig Brodersen (*School of the Environment*), Marian Chertow (*School of the Environment)*, Kenneth Gillingham (*School of the Environment, Economics, School of Management*), Jennifer Raab (*History of Art*), Elihu Rubin (*Architecture*), Carla Staver (*Ecology and Evolutionary Biology*), David Vasseur (*Ecology and Evolutionary Biology*)

Assistant Professors Anjelica Gonzalez (*Biomedical Engineering*), Krystal Pollitt (*Engineering and Applied Science*), William Rankin (*History, History of Science*)

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

Lecturers Alan Burdick, Mary Beth Decker, Marlyse Duguid, Michael Fotos, Kealoha Freidenburg, Gordon Geballe, Robert Klee, Linda Puth, Catherine Skinner