ENVIRONMENTAL STUDIES

Director: Elizabeth Safran
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Environmental studies situates environmental problems and solutions in a scholarly context, working alongside other academic disciplines to build a more livable world. The field crosses traditional disciplinary boundaries, as a deeper understanding of environmental problems and solutions requires attention to a wide range of concepts and analytical methods that span the sciences and humanities. Our students master contemporary scholarship on environmental problems and solutions, develop cutting-edge computer and analytical skills, and demonstrate leadership in applying relevant scholarship and skills toward the environmental issues of today and tomorrow.

The educational objective of the Environmental Studies Program is to provide resources and cultivate an atmosphere whereby students (1) appreciate the intellectual and practical complexities of environmental problems and solutions, (2) master key concepts and methods of environmental analysis drawn from, and integrating, a broad range of disciplines, and (3) fuse this background knowledge and analytical ability with leadership and communication skills to successfully devise and implement creative, academically grounded solutions to environmental problems.

The Environmental Studies Program benefits from the participation of many departments in the College of Arts and Sciences, as well as the law school (https://law.lclark.edu/) and Graduate School of Education and Counseling (http://lclark.edu/graduate/). We offer students opportunities for environmental research, internships, and engagement on campus, in nearby locations such as Tryon Creek State Natural Area (http://oregonstateparks.org/park_144.php) and the Portland (http://portlandoregon.gov) metropolitan area, in the greater Pacific Northwest (http://en.wikipedia.org/wiki/Pacific_Northwest/), and throughout the world in conjunction with Lewis & Clark's Overseas and Off-Campus Programs (https://docs.lclark.edu/undergraduate/overseas/). The Environmental Studies Program thus combines intellectual rigor and breadth with practical experience in a vibrant, transdisciplinary field of scholarly inquiry.

A major in environmental studies is appropriate for students who desire future employment in the environmental arena and/or want a broad, systematic liberal arts background to support further scholarly study in related natural science, social science, and humanities fields.

The Major Program

The major includes core courses in environmental studies and breadth courses in the natural sciences, social sciences, and humanities.

Core courses are designed to weave together concepts and skills from breadth course fields to build an intellectually coherent understanding of environmental problems and solutions. The core sequence starts with a broad introductory course, followed by development of quantitative and qualitative analytical skills and advanced treatment of environmental theory. It culminates in a senior capstone representing original scholarly research on a topic of practical relevance. An additional core course builds communication, cultural competency, and other skills toward successful public engagement.

Breadth courses in fields including biology, chemistry, English, geology, economics, sociology and anthropology, international affairs, history, philosophy, and religious studies provide important discipline-specific tools for environmental analysis.

Majors receive faculty guidance toward areas of interest relevant to their academic and professional goals, and are encouraged to pursue overseas study, ideally related to these areas of interest, during their third year.

Major Requirements

A minimum of 50 semester credits, distributed as follows:

Core Requirements

- ENVS 160 Introduction to Environmental Studies
- ENVS 220 Environmental Analysis
- ENVS 295 Environmental Engagement
- ENVS 400 Senior Seminar

Breadth Requirements

- 8 credits chosen from the natural science breadth courses listed below. The courses must be taken from different departments.
- 8 credits chosen from the social science breadth courses listed below. The courses must be taken from different departments.
- 8 credits chosen from the arts and humanities breadth courses listed below. The courses must be taken from different departments.

Environmental Studies or Earth Systems Science

- 4 credits chosen from the environmental studies and earth system science elective courses listed below.

Quantitative

- 4 credits chosen from the quantitative courses listed below.

All Lewis & Clark courses intended to fulfill environmental studies major requirements must be taken for a letter grade, with the exception of ENVS 244 Practicum.

Minor Requirements

A minimum of 25 semester credits (six courses), distributed as follows:

- ENVS 160 Introduction to Environmental Studies
- ENVS 220 Environmental Analysis
- ENVS 295 Environmental Engagement
- 4 credits chosen from the natural science breadth courses listed below.
- 4 credits chosen from the social science breadth courses listed below.
- 4 credits chosen from the arts and humanities breadth courses listed below.

All Lewis & Clark courses intended to fulfill environmental studies minor requirements must be taken for a letter grade.

Natural Science Breadth Courses

BIO 201	Biological Core Concepts: Systems
CHEM 100	Perspectives in Environmental Chemistry
CHEM 110	General Chemistry I
ESS 150	Environmental Geology
ESS 170	Climate Science

Social Science Breadth Courses

ECON 260	Environmental and Natural Resource Economics
ENVS 460	Topics in Environmental Law and Policy
IA 257	Global Resource Dilemmas
IA 340	International Political Economy
POLS 346	State and Local Politics
SOAN 265	Critical Perspectives on Development
SOAN 305	Environmental Sociology

Arts and Humanities Breadth Courses

ENG 276	Animals and Animal Rights in Literature
HIST 239	Constructing the American Landscape
HIST 261	Global Environmental History
HIST 388	What's for Dinner
PHIL 215	Philosophy and the Environment
RELS 102	Food and Religion in America
RELS 105	Apocalyptic Imagination

Environmental Studies or Earth System Science Elective Courses

ENVS 311	(Un)Natural Disasters
ENVS 350	Environmental Theory
ENVS 490	Topics in Environmental Studies
ESS 270	Issues in Oceanography
ESS 280	The Fundamentals of Hydrology
ESS 290	Topics in Earth System Science
ESS 340	Spatial Problems in Earth System Science

Quantitative Requirement Courses

CS 171	Computer Science I
DSCI 140	Introduction to Data Science
ECON 103	Statistics
HEAL 200	Biostatistics in Public Health
MATH 123	Calculus & Statistics for Modeling the Life Sciences
MATH 131	Calculus I
POLS 201	Research Methods in Political Science
PSY 200	Statistics I

Honors

Students who distinguish themselves academically with a GPA of 3.500 in the major may qualify for honors in environmental studies. Honors candidates work on research-based capstone projects as a part of ENVS 400 Senior Seminar, offered annually in spring semester. Based on the quality of their drafts (thesis or non-thesis outcomes), typically submitted halfway through the semester, select students will be invited to give an oral presentation and defense to ENVS faculty, who will then recommend final edits and make a determination for honors. Honors in environmental studies thus recognizes overall academic performance, distinguished scholarly quality and creativity in the senior capstone project, and a convincing oral defense.

Faculty

Barbara A. Balko. Associate professor of chemistry, , chair of the Department of Chemistry. Physical chemistry. PhD 1991 University of California at Berkeley. AB 1984 Bryn Mawr College.

Elizabeth A. Bennett. Joseph M. Ha Associate Professor of International Affairs, director of the Political Economy Program. International political economy, global social movements, voluntary social/environmental regulation, international development global governance. PhD 2014, AM 2010 Brown University. MALD 2008 Fletcher School, Tufts University. BA 2002 Hope College.

Andrew Bernstein. Associate professor of history. Japanese history. PhD 1999, MPhil 1996, MA 1994 Columbia University. BA 1990 Amherst College.

Paulette F. Bierzychudek. William Swindells Sr. Professor of Natural Sciences. Evolution, ecology, conservation biology, especially of plants and insects. PhD 1981 Cornell University. BS, BA 1974 University of Washington.

Greta J. Binford. Professor of biology. Invertebrate zoology, biodiversity, evolution of spider venoms. PhD 2000 University of Arizona. MS 1993 University of Utah. BA 1990 Miami University.

Moriah Bellenger Bostian. Associate professor of economics, chair of the Department of Economics. Environmental and resource economics, econometrics. PhD 2010 Oregon State University. MS 2005 Auburn University. BS 2003 Florida State University.

Maryann Bylander. Associate professor of sociology. Development and globalization, migration, rural livelihoods, microfinance/credit, environment, gender, qualitative and quantitative research methods. PhD 2012, MA 2006 University of Texas at Austin. BA 2003 Rice University.

Kenneth E. Clifton. Professor of biology. Animal behavior, marine biology, ecology of coral reefs. PhD 1988 University of California at Santa Barbara. BA 1981 University of California at San Diego.

Julio C. de Paula. Professor of chemistry. Physical chemistry, biophysical chemistry, nanotechnology. PhD 1987 Yale University. BA 1982 Rutgers University.

Liza Finkel. Associate professor of education. Science education, teacher education, equity in STEM education, women in science, democratic education. PhD 1993 University of Wisconsin-Madison, MS 1986 University of Michigan, BS 1981 George Washington University.

Kurt Fosso. Professor of English. British romantic literature, critical theory, classical backgrounds. PhD 1993, MA 1988 University of California at Irvine. BA 1987 University of Washington.

Susan Glosser. Associate professor of history. Chinese history. PhD 1995 University of California at Berkeley. MA 1985, BA 1983 State University of New York at Binghamton.

Reiko Hillyer. Associate professor of history, chair of the department of history, director of the Ethnic Studies program. U.S. South, African American history, history of the built. PhD 2006, MPhil 2001, MA 1999 Columbia University. BA 1991 Yale University.

Jessica M. Kleiss. Associate professor of environmental studies. Oceanography, interface between the atmosphere and the ocean. PhD 2009 Scripps Institution of Oceanography, University of California at San Diego. BS 2000 Massachusetts Institute of Technology.

Robert A. Kugler. Paul S. Wright Professor of Christian Studies. Judeo-Christian origins, Dead Sea Scrolls, early Jewish literature. PhD 1994 University of Notre Dame. MDiv 1984 Pacific Lutheran Theological Seminary. BA 1979 Lewis & Clark College.

Bob Mandel. Professor of international affairs, chair of the Department of International Affairs. Conflict and security, global resource issues, transnational studies, psychological aspects of international affairs, research methods, international relations theory. PhD 1976, MPhil 1975, MA 1974 Yale University. AB 1972 Brown University.

Margaret Rowan Metz. Associate professor of biology. Plant community ecology, tropical ecology, disease ecology. PhD 2007 University of California at Davis. AB 1998 Princeton University.

Susanna Morrill. Associate professor of religious. Religion in America. PhD 2002, MA 1993 University of Chicago. BA 1989 Bryn Mawr College.

Jay Odenbaugh. Professor of philosophy. Ethics, philosophy and the environment, philosophy of science, metaphysics, logic. PhD 2001 University of Calgary. MA 1996 Southern Illinois University at Carbondale. BA 1994 Belmont University.

Bruce M. Podobnik. Associate professor of sociology. Environmental sociology, social theory, mixed methods, the sociocultural dimensions of activism, the social roots of happiness. PhD 2000, MA 1994 Johns Hopkins University. BA 1991 University of California at Santa Cruz.

James D. Proctor. Professor of environmental studies. PhD 1992, MA 1989, MS 1989 University of California at Berkeley. BA 1980 University of Oregon.

Karen Russell. Adjunct Legal Faculty. Environmental law and policy. BA 1985 University of Washington. JD 1990 Lewis and Clark Law School.

Elizabeth B. Safran. Associate professor of geological science, director of the Environmental Studies Program, coordinator of the Earth System Science Program. Geomorphology. PhD 1998 University of California at Santa Barbara. MSc 1993 University of Washington. BA 1989 Harvard University.

Ellen C. Seljan. Associate professor of political science, director of the Data Science program. American politics and public policy. PhD 2010 University of California at San Diego. BA 2004 Drew University.

Courses

ENVS 160 Introduction to Environmental Studies
Content: Scholarly perspectives on environmental problems and solutions, integrating concepts and analytical skills drawn from the natural sciences, social sciences, and humanities. Foundation for all subsequent courses in the environmental studies major. Lectures, faculty and guest presentations, regular online assignments, individual and group research projects.
Prerequisites: None.
Restrictions: Enrollment limited to first- and second-year students.
Usually offered: Annually, fall and spring semester.
Semester credits: 4.

ENVS 200 Situating the Global Environment
Content: Introduction to situated perspective on environmental problems and solutions, including a range of international and overseas program-specific cases. Development of Web-based social learning skills to document and share situated research. Regular reading and summary discussions, lectures, fieldwork, online synthesis postings, and final report. Taught in conjunction with an ENVS summer overseas program.
Prerequisites: ENVS 160.
Restrictions: Sophomore standing and acceptance into an overseas program required.
Semester credits: 4.

ENVS 220 Environmental Analysis
Content: Development of research and analytical skills in environmental studies as preparation for upper-division work by majors and minors. Emphasis on formulation, practice, and communication of research. Skills span full range of allied fields, including descriptive and inferential statistics, geographic information systems, survey and interview techniques, qualitative data analysis, and bibliographic research. Lectures, individual and small-group assignments, and course project. Accompanying lab provides opportunity for students to build analytical skills via real-world research.
Prerequisites: ENVS 160. Enrollment preference given to departmental majors fulfilling degree requirements.
Corequisites: ENVS 220L.
Restrictions: Sophomore standing required.
Usually offered: Annually, spring semester.
Semester credits: 5.

ENVS 244 Practicum
Content: Nonclassroom learning experience combining theoretical concepts and skills learned in the classroom with practical work in an on-campus or off-campus setting. Additional readings and written assignments required. Arrangements for the practicum should be made during the semester prior to enrollment. May be repeated for credit.
Prerequisites: ENVS 160.
Restrictions: Sophomore standing and consent required.
Usually offered: Annually, fall and spring semester.
Semester credits: 1-4.

ENVS 245 Environment Across Boundaries (ENVX) Symposium
Content: Practicum involving extensive research to explore the symposium theme, identify guest speakers and panelists, develop panel discussion topics, and create the program of events. Student cochairs work closely together and with ENVS faculty and administrators to develop leadership, organizational, and professional communication skills. Course culminates in the production of the annual ENVX symposium.
Prerequisites: ENVS 160.
Usually offered: Annually, fall and spring semester.
Semester credits: 1-4.

ENVS 295 Environmental Engagement
Content: Faculty-directed student engagement, connecting environmental scholarship to people in a variety of settings. Identification and finalization of engagement opportunities; development of communication, cultural competency, and related skills; reflection on engagement experiences; and authoring and sharing of outcomes. Engagement projects build on partnerships with Portland-area organizations.
Prerequisites: ENVS 160.
Usually offered: Annually, spring semester.
Semester credits: 4.

ENVS 311 (Un)Natural Disasters
Content: Causes and consequences of "natural disasters" (earthquakes, volcanic eruptions, landslides, tornadoes, hurricanes, fires, tsunamis), with a focus on the interplay between the human and physical landscapes that make these events so deadly and imbued with diverse meanings. Perspectives drawn from the humanities, social sciences, and natural sciences to examine both historical events whose consequences have played out and recent dramas whose aftermaths are still unfolding. Contrast of impacts and perceptions of these events with select examples of anthropogenic disasters (Chernobyl, Bhopal, Deepwater Horizon); anticipation of future natural disasters and consideration of the science of living with risk. Projects emphasize local and regional issues.
Prerequisites: ENVS 220, ESS 150, or ESS 170.
Restrictions: Sophomore standing required.
Usually offered: Alternate Years, fall and spring semester.
Semester credits: 4.

ENVS 350 Environmental Theory
Content: Advanced exploration of major theoretical assumptions underlying environmental studies, including the nature of environment, environmental knowledge (including role of sciences and humanities), and environmental problems and solutions. Intensive reading and writing, class discussions, and project-based application of theory to contemporary topics.
Prerequisites: ENVS 160.
Usually offered: Annually, spring semester.
Semester credits: 4.

ENVS 400 Senior Seminar
Content: An advanced, integrative keystone seminar involving primary research for all senior environmental studies majors. Research capstones (theses or alternative outcomes) are based on each student's areas of interest within the major and include both oral and written components. Students should have completed all other environmental studies core courses prior to taking this course.
Prerequisites: ENVS 220.
Restrictions: Senior standing required.
Usually offered: Annually, spring semester.
Semester credits: 4.

ENVS 460 Topics in Environmental Law and Policy
Content: Introduction to issues in environmental law and policy. Taught by environmental and natural resources law faculty of Lewis Clark Law School, the course covers major areas in environmental law. Topics vary and may include water law, the Endangered Species Act, hazardous waste law, environmental justice, environmental law enforcement, the World Trade Organization, public lands law, the Clean Air Act, and the National Environmental Policy Act. Panels discuss careers in law and study of law. A unique opportunity for students interested in careers in environmental law and policy.
Prerequisites: ENVS 160.
Restrictions: Junior standing required.
Usually offered: Annually, fall semester.
Semester credits: 4.

ENVS 490 Topics in Environmental Studies
Content: Application of concepts and skills from ENVS 160 and ENVS 220 to the understanding of specific environmental issues. Potential topics include biodiversity, climate change, energy, environmental justice, international agreements, land use, natural-resource depletion, pollution, sustainability, transportation, and urban sprawl. May be taken twice for credit with change of topic.
Prerequisites: ENVS 160 and ENVS 220.
Restrictions: Sophomore standing required.
Usually offered: Alternate Years, fall and spring semester.
Semester credits: 4.

ENVS 499 Independent Study
Content: Opportunity for the well-prepared student to design and pursue a substantive course of independent learning on an advanced level. Details determined by the student and the supervising instructor. Students should have completed ENVS 160 and ENVS 220 prior to taking this course. May be repeated for credit.
Prerequisites: ENVS 160. ENVS 220.
Restrictions: Sophomore standing and consent required.
Usually offered: Annually, fall and spring semester.
Semester credits: 1-4.