

# Environmental Science and Policy

## Chair

Leslie L. King, Ph.D., Professor of Sociology

## Assistant Director

Joanne Benkley

## Members of the Program Committee

Alexander Richard Barron, Assistant Professor of Environmental Science and Policy

Jesse Bellemare, Associate Professor of Biological Sciences <sup>12</sup>

Andrew Berke, Associate Professor of Chemistry

Colin Hoag, Assistant Professor of Anthropology

Efadul Huq, Assistant Professor of Environmental Science and Policy

Leslie L. King, Professor of Sociology <sup>11</sup>

Steven Moga, Associate Professor of Landscape Studies <sup>12</sup>

Yancey Orr, Associate Professor of Environmental Science and Policy

Paulette M. Peckol, Professor of Biological Sciences <sup>12</sup>

Jeffrey Lee Ramsey, Associate Professor of Philosophy <sup>11</sup>

Amy Larson Rhodes, Professor of Geosciences

Heather Rosenfeld, Lecturer of Environmental Science and Policy

Susan Stratton Sayre, Associate Professor of Economics <sup>11</sup>

L. David Smith, Professor of Biological Sciences <sup>11</sup>

Camille Washington-Ottombre, Associate Professor of Environmental Science and Policy <sup>11</sup>

Gregory Wayne White, Professor of Government <sup>11</sup>

## The Major

**Advisers:** Alexander Barron, Jesse Bellemare, Andrew Berke, Colin Hoag, Efadul Huq, Leslie King, Steven Moga, Yancey Orr, Paulette Peckol, Jeffrey Ramsey, Amy Larson Rhodes, Susan Stratton Sayre, L. David Smith, Camille Washington-Ottombre and Gregory White

The environmental science and policy (ES&P) major is designed for students with interests in the environment and sustainability and a commitment to scientifically-based problem solving and policy analysis. The objectives of the major are to prepare students to transcend disciplinary boundaries, combine analytical and communication skills with a well-rounded understanding of the environment, and translate this knowledge into meaningful action and innovative solutions. Four integration courses form the intellectual and organizational core of the major. Each course brings together frameworks, proficiencies and knowledge from natural and social sciences in an explicitly integrative fashion to explore and analyze important environmental topics at local, regional, national and global levels. Additional foundational courses provide breadth in the natural and social sciences, humanities, and statistics, and introduce students to fundamental aspects of disciplines important to understanding human-environment interactions. Students gain depth of knowledge by choosing a coherent sequence of electives with a clear environmental focus. Students are strongly encouraged to engage in environmentally oriented internships, independent research or study-away opportunities. Prospective majors should consult with an ES&P faculty adviser in choosing their courses. In their first semesters, students are encouraged to enroll in one of the foundational courses (see list) and an appropriate integration course (101), as well as statistics.

**Requirements:** The ES&P major requires 14 courses. These include the following:

- Four environmental integration courses (ENV 101, ENV 201/202, ENV 311, ENV 312)
- Five foundational courses:
- Two courses from different areas in the natural sciences (BIO, CHM, GEO, PHY), one of which must be a lab course (see list)
- Two courses in the category of social sciences, humanities and policy (SSHP) from different departments (see list)
- A fifth course at any level in either the natural sciences or SSHP, or a quantitative/research methods course. The 2-credit stand-alone laboratories BIO 131 and GEO 102 may be used for the fifth course. A student cannot count two 100-level lecture courses in the same discipline toward the foundation requirement.
- One course in statistics (see list)
- Four electives that create a coherent sequence with a clear environmental focus. No more than one elective may be at the 100 level and at least one must be at the 300 level; ENX 100 may not be used as an elective. One semester of independent study (400) or credit toward an honors thesis (430d) may be substituted for one elective, but neither may count as the 300-level elective.
- One course fulfilling the major requirements may be taken S/U; ENV 201/202, ENV 311, and ENV 312 may not be taken S/U.

## Environmental Integration Courses

All majors must complete the four environmental integration courses:

ENV 101	Sustainability and Social-Ecological Systems
ENV 201	Researching Environmental Problems
ENV 202	Researching Environmental Problems Laboratory
ENV 311	Interpreting and Communicating Environmental Information
ENV 312	Sustainable Solutions

## Foundational Courses

### Natural Sciences

All majors must take one course in two of the following four natural science areas: biological sciences, chemistry, geosciences, or physics. One of these two courses must include a laboratory or field component (e.g., CHM 111, GEO 108), or be taken with an accompanying laboratory or field course (e.g., BIO 130 and BIO 131). Students with Advanced Placement credit (4 or 5) in an area may substitute an appropriate upper-level course in consultation with an ES&P adviser and in accordance with guidelines of the home department.

### Natural Science Lab or Field Courses

BIO 131	Research in Biodiversity, Ecology, and Conservation
CHM 111	Chemistry I: General Chemistry
CHM 118	Advanced General Chemistry
FYS 103	Geology in the Field
GEO 102	Exploring the Local Geologic Landscape
GEO 108	Oceanography: An Introduction to the Marine Environment

### Natural Science Lecture Courses

BIO 130	Biodiversity, Ecology and Conservation
CHM 108	Environmental Chemistry
ENV 108	Environmental Chemistry
GEO 101	Introduction to Earth Processes and History
GEO 104	Global Climate Change: Exploring the Past, the Present and Options for the Future
GEO 105	Natural Disasters: The Science Behind the Headlines
GEO 106	Extraordinary Events in the History of Earth, Life and Climate
PHY 110	Energy, Environment and Climate

### Social Sciences, Humanities and Policy

All majors must take two courses from the social science, humanities and policy category listed below. The courses must be from different departments. Students with Advanced Placement credit (4 or 5) in an area may substitute an appropriate upper-level course in consultation with an ES&P adviser and in accordance with guidelines of the home department.

ANT 130	Introduction to Cultural Anthropology
ANT 224	Anthropos in the Anthropocene: Human-Environment Relations in a Time of Ecological Crisis
ECO 150	Introductory Microeconomics
ENG 118	Colloquia in Writing <i>Writing About Science</i> <i>Water: Science and Politics</i>
ENG 119	Writing Roundtable <i>What's for Dinner? Writing About Food</i> <i>This Overheating World</i>
ENG 135	Introduction to Writing Creative Nonfiction <i>Writing About the Environment</i> <i>Writing About Place and Travel</i>
FYS 101	The Lives of Animals: Literature and the Nonhuman
FYS 151	Our Mill River
FYS 163	Exploring Our National Parks
GOV 200	American Government
GOV 207	Politics of Public Policy
GOV 220	Introduction to Comparative Politics
GOV 241	International Politics
LAS 201	Colloquium in Latin American and Latino/a Studies <i>Environmental Legacies and Ecological Futures of Latin America</i> <i>Climate and Conflict</i>
LSS 255	Art and Ecology
PHI 238	Environmental Ethics
PPL 220	Public Policy Analysis
RES 210	Environment and Ecology in Russian Culture
SOC 101	Introduction to Sociology
SWG 150	Introduction to the Study of Women and Gender

### Statistics

All majors must take one course in statistics (ECO 220, GOV 203, MTH 220, PSY 201, SDS 201, SDS 220 or SOC 204). Students with Advanced Placement credit (4 or 5) in statistics may substitute an appropriate upper-level statistics course in consultation with an ES&P adviser and in accordance with guidelines of the home department.

## Electives for the Environmental Focus

Majors should choose their elective courses in consultation with the major adviser to create a coherent sequence with a clear environmental focus; the focus may be specific to a discipline, topic or location. No more than one elective can be at the 100 level; at least one must be at the 300 level. Several colloquium and seminar courses have rotating themes; approval is granted for years when the focus is on environmental and sustainability topics. ENX 100 may not be used as an elective. Electives and the environmental focus can be identified at the time the major is declared but not later than the end of the add/drop period of the first semester of junior year. Subsequent changes require approval of the major adviser. Electives can include but are not limited to the following approved list. Other relevant courses offered at Smith, within the Five College Consortium, or in study-away programs may be used to satisfy the electives requirement of the major with consultation and approval of the major adviser. One semester of independent study (400) or credit toward an honors thesis (430d) may be substituted for one elective, but neither may count as the 300-level elective. 400 must be taken for 3 or 4 credits to be used as an elective. Internships, study-abroad or Praxis experiences are encouraged.

### Natural Sciences

#### Biological Sciences

BIO 103	Economic Botany: Plants and Human Affairs
BIO 206	Plant Physiology
BIO 207	Plant Physiology Laboratory
BIO 260	Invertebrate Diversity
BIO 261	Invertebrate Diversity Laboratory
BIO 264	Plant Diversity and Evolution
BIO 265	Plant Diversity and Evolution Laboratory
BIO 266	Ecology: Principles and Applications
BIO 267	Ecology: Principles and Applications Laboratory
BIO 268	Marine Ecology
BIO 269	Marine Ecology Laboratory
BIO 272	Vertebrate Biology
BIO 273	Vertebrate Biology Laboratory
BIO 364	Plant Ecology
BIO 365	Plant Ecology Laboratory
BIO 366	Biogeography
BIO 390	Seminar: Topics in Environmental Biology <i>Coral Reef Ecology and Conservation</i> <i>Investigations in Conservation Biology</i>

#### Chemistry

CHM 346	Environmental Analytical Chemistry <i>Environmental Science and Policy</i>
ENV 150	Mapping Our World: An Introduction to Geographic Information Systems
ENV 224	Anthropos in the Anthropocene: Human-Environment Relations in a Time of Ecological Crisis
ENV 229	Critical Cartography and Environmental Social Movements
ENV 323	Climate and Energy Policy
ENV 326	Seminar: Environmental Justice and Natural Resource Management
ENV 327	Environmental Justice in an Urbanizing World
ENV 313	Political Ecology of Animals
ENV 340	Climate Change: Making Social Change Happen <i>A Calderwood Seminar in Public Writing</i>

### Environmental Concentration

ENX 301 Environmental Concentration Capstone

### Geosciences

GEO 150 Mapping our World:  
An Introduction to Geographic Information Systems  
GEO 231 Invertebrate Paleontology and the History of Life  
GEO 232 Sedimentary Geology  
GEO 251 Geomorphology  
GEO 301 Aqueous Geochemistry  
GEO 309 Groundwater Geology

### Physics and Engineering

EGR 312 Seminar: Atmospheric Processes  
EGR 314 Seminar: Contaminants in Aquatic Systems  
EGR 315 Seminar: Ecohydrology  
EGR 325 Seminar: Electric Power Systems  
EGR 326 Dynamic Systems and Introduction to Control Theory  
EGR 346 Hydrosystems Engineering  
EGR 388 Seminar: Photovoltaic and Fuel Cell System Design  
EGR 390 Advanced Topics in Engineering  
*Contaminant Fate and Removal in Aquatic Systems*

### Social Sciences, Humanities and Policy

AMS 229 Native New England  
AMS 245 Feminist and Indigenous Science Studies  
AMS 302 Seminar: The Material Culture of New England, 1630–1860  
ANT 224 Anthropos in the Anthropocene:  
Human-Environment Relations in a Time of Ecological Crisis  
ANT 226 Archaeology of Food  
ANT 229 Africa and the Environment  
ANT 317 Seminar: The Anthropology of Landscape – Space, Place, Nature  
ARH 291 Topics in Art History  
*Protest Art of the United States:  
Dissent and Resistance in the 20th–21st Centuries*  
ARS 153 Drawing Social Justice  
ARS 280 Introduction to Architectural Design Studio:  
Analog Processes - Ground  
ARS 389 Broad-Scale Design and Planning Studio  
DAN 171 Dance History: Political Bodies From the Stage to the Page  
DAN 339 Movement Ecology and Performance in the Smith Landscape  
ECO 224 Environmental Economics  
ECO 271 The Economics of Climate Change  
ECO 324 Seminar  
*Economics of the Environment and Natural Resources*  
ENG 100 Nature's Nation?: American Literature of the Environment  
ENG 119 Writing Roundtable  
*What's for Dinner? Writing About Food*  
ENG 135 Introduction to Writing Creative Nonfiction  
*Writing About the Senses  
Place and Travel*  
ENG 237 Environmental Poetry and Ecological Thought  
ENG 290 Crafting Creative Nonfiction  
*The Art of Writing about Science*  
ENG 291 Lakes Writing Workshop  
*Writing for Change:  
Community Engagement, Activism and Social Justice*  
ENG 363 Race and Environment  
ENV 275 Decoding the Experts: Modeling the Impact of Climate Change

ENV 113 Colloquium: Organic, Mechanical and Digital Environments  
ENV 218 Environmental Policy  
ENV 323 Climate and Energy Policy  
ENV 326 Seminar: Environmental Justice and  
Natural Resource Management  
Eden and Other Gardens  
FYS 122 Reading, Writing and Placemaking: Landscape Studies  
FYS 141 Housing In/Justice and Tiny House Dreams  
FYS 155 Borders, Identity, and Justice  
FYS 190 Advanced Intermediate German: Environmental Culture  
GER 250 Social Justice Movements in Latin America  
GOV 239 International Political Economy  
GOV 242 Colloquium: Politics of the Global Environment  
GOV 254 Seminar in International Politics and Comparative Politics  
GOV 347 *Environmental Security*  
ITL 205 Savoring Italy: Recipes and Thoughts on Italian Cuisine and Culture  
JUD 229 Judaism and Environmentalism  
LAS 201 Colloquium in Latin American and Latino/a Studies  
*Climate and Conflict  
Environmental Legacies and Ecological Futures in Latin America  
Banana Republics–Crops and Capitalism*  
LAS 301 Seminar: Topics in Latin American and Latino/a Studies  
*Contesting Space: Art, Ecology, Activism  
Deep History of Water*  
LSS 230 Urban Landscapes  
LSS 250 Studio: Landscape and Narrative  
LSS 255 Art and Ecology  
LSS 300 Rethinking Landscape  
LSS 315 Seminar: Urban Ecological Design  
MUS 258 Performing Culture  
PHI 221 Ethics and Society  
PHI 224 Philosophy and History of Scientific Thought  
PHI 238 Environmental Ethics  
PHI 304 Seminar in Applied Ethics  
*Sustainability*  
PSY 268 The Human Side of Climate Change  
REL 305 Advanced Topics in Religion  
*Violence, Non-violence and Revolution*  
RES 210 Environment and Ecology in Russian Culture  
SOC 230 Sociology of Food  
SOC 232 World Population  
SOC 233 Sociology of Climate Change  
SOC 333 Seminar: Social Justice, the Environment and the Corporation  
SPN 230 Latin American and Peninsular Culture and Society  
*Climate Voices*  
SWG 227 Feminist and Queer Disability Studies  
SWG 230 Gender, Land and Food Movements  
SWG 267 Queer Ecologies  
SWG 321 Marxist Feminism  
WLT 340 Narrating the Anthropocene

### Special Studies

#### ENV 400 Special Studies

Admission by permission of the instructor. Special Studies are open to qualified juniors and seniors and, in appropriate cases, to sophomores. Students are encouraged to contact the instructor in advance of the semester they intend to take this course. Credits: 1–4  
*Members of the department*  
Normally offered both fall and spring semesters

## Honors

Students with a strong academic background who wish to conduct independent and original work on an environmental topic are encouraged to pursue an honors project. Interested students should contact potential honors advisers by the beginning of February in the spring semester of their junior year.

Please consult the director of honors for specific requirements and application procedures.

**Director:** Andrew Berke

### ENV 430D Honors Project

Full-year course, 4 credits each semester. Offered every year. Please consult the director of honors for specific requirements and application procedures. Credits: 8

Normally offered both fall and spring semesters

## Study Abroad

Students may elect to take courses for the major outside Smith College by participating in an environmentally oriented, off-campus program. Relevant Smith-approved programs include but are not limited to Arava Institute for Environmental Studies, Danish Institute for Study Abroad, Duke University's Organization for Tropical Studies, Frontiers Abroad Earth Systems New Zealand, the School for Field Studies, the School for International Training, SEA Semester, and the Maritime Studies Program of Williams College and Mystic Seaport. Courses from other study-away programs may also be eligible for credit with approval of the major adviser. Study-away courses will generally count as 200-level electives, but specific courses in specific programs may be authorized to count as 300-level electives with preapproval of the major adviser.

**Study Abroad Adviser:** Your major adviser for environmental science and policy

## The Minor

**Advisers:** Advisers for the major also serve as advisers for the minor

The minor consists of six courses chosen with the guidance and approval of an ES&P adviser. Interested students are urged to meet with the chair, assistant director or ES&P adviser early in their academic planning.

Requirements: Six courses: ENV 101; two courses from the natural science category (must be in different areas); one course from the social science, humanities and policy category; and two electives in consultation with the minor adviser. For three of the six courses, two must be 200 level or higher; the third should normally be above the 100 level. EGR 315 and GEO 301 may be used to fulfill a natural science requirement in either of two categories (see list below). EGR 100 has several rotating themes and may count toward the minor when the focus is on energy, natural resources or sustainability. ENV 100 may not be used as an elective; ENV 201/202 and ENV 311 may count as electives toward the minor but do not fulfill either the natural science or the social science, humanities and policy requirements. We recommend taking a course in geographic information systems (ENV 150/GEO 150) as an elective. Appropriate Smith courses not listed below, Five College courses, or courses taken at other institutions and through summer and semester-away programs may be counted toward the minor with preapproval of the adviser. Students must satisfy the prerequisites for all courses included in their minor program. No more than three of the six courses may be taken at other institutions. No more than one course may be taken S/U; ENV 101 may not be taken S/U.

## Natural Sciences

All minors must take one course in two of the following four natural science areas:

### Biological Sciences

BIO 130	Biodiversity, Ecology and Conservation
BIO 266	Ecology: Principles and Applications
BIO 267	Ecology: Principles and Applications Laboratory
BIO 268	Marine Ecology
BIO 269	Marine Ecology Laboratory
BIO 364	Plant Ecology
BIO 365	Plant Ecology Laboratory
BIO 390	Seminar: Topics in Environmental Biology <i>Coral Reef Ecology and Conservation</i> <i>Investigations in Conservation Biology</i>

### Chemistry

CHM 108	Environmental Chemistry
CHM 346	Environmental Analytical Chemistry
ENV 108	Environmental Chemistry
GEO 301	Aqueous Geochemistry

### Geosciences

GEO 101	Introduction to Earth Processes and History
GEO 104	Global Climate Change: Exploring the Past, the Present and Options for the Future
GEO 105	Natural Disasters: The Science Behind the Headlines
GEO 106	Extraordinary Events in the History of Earth, Life and Climate
GEO 108	Oceanography: An Introduction to the Marine Environment
GEO 301	Aqueous Geochemistry
GEO 309	Groundwater Geology

### Physics and Engineering

EGR 100	Engineering for Everyone <i>How We Engineer the Environment</i> <i>Sustainable Water Resources</i> <i>Energy and the Environment</i>
EGR 312	Seminar: Atmospheric Processes
EGR 315	Seminar: Ecohydrology
PHY 110	Energy, Environment and Climate

## Social Sciences, Humanities and Policy

All minors must take one course in the social sciences, humanities and policy category.

ANT 224	Anthropos in the Anthropocene: Human-Environment Relations in a Time of Ecological Crisis
ANT 229	Africa and the Environment
ECO 224	Environmental Economics
ECO 271	The Economics of Climate Change
ENV 224	Anthropos in the Anthropocene: Human-Environment Relations in a Time of Ecological Crisis
ENV 229	Critical Cartography and Environmental Social Movements
ENV 275	Decoding the Experts: Modeling the Impact of Climate Change
ENV 313	Political Ecology of Animals
ENV 323	Climate and Energy Policy
ENV 326	Seminar: Environmental Justice and Natural Resource Management
ENV 327	Environmental Justice in an Urbanizing World
GOV 207	Politics of Public Policy

GOV 242	International Political Economy
GOV 254	Colloquium: Politics of the Global Environment
GOV 347	Seminar in International Politics and Comparative Politics <i>Environmental Security</i>
JUD 229	Judaism and Environmentalism
PHI 238	Environmental Ethics
PSY 268	The Human Side of Climate Change
SOC 233	Sociology of Climate Change

## Electives

All minors must take two elective courses. Electives may include ENV 201/202; ENV 311; courses listed above for the minor in the natural sciences and social sciences, humanities and policy categories; and courses listed under electives for the environmental focus for the major. Other relevant courses offered at Smith, within the Five College Consortium, or in study-away programs may be used to satisfy the electives requirement of the minor with consultation and approval of the major adviser.

## Courses

### ENV 101 Sustainability and Social-Ecological Systems

We have entered a new geological epoch, the Anthropocene, characterized by the accelerating impact of human activities on the Earth's ecosystems. All over the globe, humans have transformed the environment and have sometimes created catastrophic dynamics within social-ecological systems. Scientists have studied these phenomena for decades, alerting both the general public and policy-makers of the consequences of our actions. However, despite convincing evidence of environmental degradation, humans continue to radically transform their environment. This course explores this puzzle and asks how we can remodel our social-ecological systems to build a more sustainable and resilient future. {H} {N} {S} Credits: 4

*Members of the department*

Fall, Spring

### ENV 108/CHM 108 Environmental Chemistry

Offered as CHM 108 and ENV 108. An introduction to environmental chemistry, applying chemical concepts to topics such as acid rain, greenhouse gases, air quality, pesticides and waste treatment. Chemical concepts are developed as needed. {N} Credits: 4

*Members of the department*

Spring

### ENV 113 Colloquium: Organic, Mechanical and Digital Environments

Beginning in the late 20th century, human organization and experience has increasingly been influenced by digital forms of communication, production and integration with the environment. This is an environmental, technological, social landscape that will likely dominate the rest of our lives, but how can we responsibly accept or use it without putting it in context with other forms of technology and communities? We will examine life and our relationship to nature in organic, mechanical and digital societies in order to understand the following: 1) How we may be different types of people as a result of our technology, and 2) How technological change can be linked to social transformations. Because technology and its effects on society are multifaceted, we will draw from several disciplines. Sources from historians, anthropologists, sociologists, philosophers, political scientists and ecologists will be used to reconstruct these worlds and place our own in clearer context. Enrollment limited to 18. {S} Credits: 4

*Yancey Orr*

Fall, Spring, Variable

### ENV 150/ GEO 150 Mapping our World: An Introduction to Geographic Information Systems

Offered as GEO 150 and ENV 150. A geographic information system (GIS) enables data and maps to be overlain, queried and visualized in order to solve problems in many diverse fields. This course provides an introduction to the fundamental elements of GIS and applies the analysis of spatial data to issues in geoscience, environmental science and public policy. Students gain expertise in ArcGIS--the industry standard GIS software--and online mapping platforms, and carry out semester-long projects in partnership with local conservation organizations. Enrollment limited to 20. {N} Credits: 4

*John Loveless*

Fall

### ENV 201 Researching Environmental Problems

While focusing on topical environmental issues, students learn how to gather, analyze and present data using methods from the natural and social sciences. Data are drawn from multiple sources, including laboratory experiments, fieldwork, databases, archival sources, surveys and interviews. Emphasis is on quantitative analysis. Environmental topics vary in scale from the local to the global. Corequisite: ENV 202. Prerequisite: ENV 101. Enrollment limited to 18. {N} {S} Credits: 4

*Members of the department*

Fall, Spring

### ENV 202 Researching Environmental Problems Laboratory

In this laboratory complement to 201, students use a variety of methods to gather and analyze different types of environmental data (quantitative, qualitative, spatial). Corequisite: ENV 201. Prerequisite: ENV 101. Enrollment limited to 18. {N} {S} Credits: 1

*Members of the department*

Fall, Spring

### ENV 207 Introduction to Environmental History

This course offers an introduction to the methods and key debates in environmental history, the history of the relationship between humanity and the "rest of nature," including climate, water, soils, landscapes, plants, animals, microbes, and others. "What is environmental history?" is in fact easier to answer than "What isn't environmental history?" Since the 1970s, environmental historians have used an environmental lens to examine topics like politics, economy, religion, gender, race, migration, art, music, literature, and culture. In addition to typical archives of texts and other historical remnants created by people, environmental historians also avail themselves to "natural" archives, including the ice core, tree-ring, and lake sediment samples collected by climate scientists. Topics in this course will include historical conceptions of nature and the natural world, human settlement, human/animal relations, disaster, agrarian development, the adoption of carbon energy, social movements centered on the environment and environmentalism, and discussions of the Anthropocene. (E) {H} Credits: 4

*Matthew Ghazarian*

Fall, Spring, Variable

### ENV 218 Colloquium: Environmental Policy

Why has the U.S. Congress failed to address so many environmental issues since the heyday of the 1970s? What can the current administration do on climate and environmental justice without Congress? Where is environmental policy being made if not in Congress? This course explores the political, economic, legal, ethical, and institutional dimensions of the environmental policy making process. The focus is on understanding policy-making systems at a range of scales and how to influence and improve them. Prerequisite: ENV 101 or instructor permission. Enrollment limited to 20. (E) {S} Credits: 4

*Alexander Richard Barron*

Annually, Spring

### **ENV 224/ANT 224 Anthropos in the Anthropocene: Human-Environment Relations in a Time of Ecological Crisis**

Offered as ANT 224 and ENV 224. Anthropology seeks to understand human life in all its complexity, but what constitutes the human is far from straightforward. This course examines the changing ways that Anthropos is being understood in an era of rapid global climate change and our planet's sixth mass extinction event, both driven by human activities. We review perspectives on the relationship between humans and their environment from various cultural perspectives, considering how they engage notions of race, class, and gender, and what they imply for nature conservation. Topics include modernity, pets, cyborgs, kinship, symbiosis, extinction, species invasions, settler colonialism, and the Anthropocene concept. Enrollment limited to 30. {S} Credits: 4

*Members of the department*

Fall, Spring, Variable

### **ENV 229 Colloquium: Critical Cartography and Environmental Social Movements**

How do maps lie? Do maps describe or create spaces and places? How does the design of a map impact its message? And how does all of this matter for environmental social movements? This course is a practice-based investigation of questions such as these, through bringing the insights of critical cartography to bear on environmental social movements. Students will come out of the course with a map portfolio, improved skills in cartography, and a deeper sense of how maps have been used to not only describe but also influence environmental issues. Prerequisite: ENV 150 or GEO 150. (E) Credits: 4

*Heather Rosenfeld*

Spring

### **ENV 311 Interpreting and Communicating Environmental Information**

This course focuses on the interpretation and communication of environmental issues and solutions from multi- and interdisciplinary perspectives. Using contemporary environmental topics as a foundation, this course emphasizes careful assessment of both message and audience to design effective communication strategies for complex topics. Students develop the ability to read, interpret, and critique environmental research from a variety of disciplines; to consider the needs and motivation of their audience; to develop evidence-based arguments tailored to a particular audience; and to articulate those arguments clearly and concisely. Prerequisite: one semester of statistics. ENV 101 and ENV 201/202 are strongly recommended. Enrollment limited to 18. {N} {S} Credits: 4

*Members of the department*

Fall

### **ENV 312 Seminar: Sustainable Solutions**

This course is designed to develop a student's abilities as an environmental problem solver through practice. The problems come in two forms: a campus or local problem related to environmental sustainability or resilience, and the problem of what to do with one's life. To address each, students engage in a semester-long group project that addresses a real-world environmental issue or question (projects vary from year to year) and a more individualized examination of the student's own values, career aspirations and skills. Student work is assessed via progress reports, exercises, class participation, an oral presentation and a final written report. Prerequisites: ENV 101, ENV 201/202 and a statistics course. Corequisite: ENV 311. Enrollment limited to 12. Juniors and seniors only. Instructor permission required. {N} {S} Credits: 4

*Members of the department*

Fall, Spring

### **ENV 313 Seminar: Political Ecology of Animals**

Natural, wild, domestic – where are the boundaries? Should we care more about “charismatic megafauna” than bugs? How are race, gender, and class implicated in animal agriculture? This course interrogates the relationship

between nonhuman animals, humans, and our shared environment. The first half introduces ways of thinking about and studying animals and society. The second half is thematic, exploring ways of conceptualizing and relating to nonhuman animals, including pets, pests, wildlife, and agricultural commodities/food. We will also explore what happens when animals switch categories, as in rewinding endeavors and animal sanctuaries. Enrollment limited to 12. Juniors and seniors only. Instructor permission required. (E) Credits: 4

*Heather Rosenfeld*

Spring

### **ENV 323 Seminar: Climate and Energy Policy**

This course examines climate change and energy policy from several perspectives including scientific, economic, equity, political and practical considerations. We examine sources and trends of greenhouse gas emissions and climate impacts and then focus on a specific sector (e.g., electric power) to consider existing policies, market structures and the spectrum of approaches to reduce emissions. Students work in small groups on projects in an active policy area and prepare a briefing and memo. Prerequisite: ENV 101 or permission of the instructor. Enrollment limited to 12. Juniors and seniors only. Instructor permission required. {N} {S} Credits: 4

*Alexander Richard Barron*

Annually, Fall, Spring

### **ENV 326 Seminar: Environmental Justice and Natural Resource Management**

This course will examine the connections between natural resource management and environmental justice in the US and the Global South. We will study the benefits and limits of traditional top-down approaches to the management of forests, land, fisheries, biodiversity, underground resources, water, food, and genomes in different parts of the world. By discussing case studies of environmental justice issues from tar sands mining in Alberta to the impact of biofuels and GMOs on local populations in Mexico, students will question and rethink the management of natural resources. Enrollment limited to 12. Juniors and seniors only. Instructor permission required. {S} Credits: 4

*Camille Washington-Ottombre*

Annually, Fall, Spring

### **ENV 327 Seminar: Environmental Justice in an Urbanizing World**

This course will explore global environmental justice issues, debates, and policies in the context of an urbanizing world marked by race, gender, nationality, ethnicity, caste, class, and other lines of difference. We will draw from scholarship in urban studies, anthropology, sociology, geography, and other related fields to develop an appreciation of global environmental injustices and efforts to redress these injustices, whether through formal planning and policies, social movements, community organizing, or everyday environmentalism. We will cover environmental issues at multiple scales from around the world and explore the interrelatedness of themes. Prerequisite: ENV 101. Enrollment limited to 12. Juniors and seniors only. Instructor permission required. Credits: 4

*Efadul Huq*

Spring

### **ENV 331 Seminar: Famine—A Global Political Ecology**

This course examines cases of famine from across the globe. Although famine has long been conceived of as arising from “natural” disasters like drought and pest infestations, recent work has suggested that human action may be more at play than had once been thought. In this course, we examine historical cases of famine to evaluate its causes and responses to it across different parts of the world. How did different societies conceive of and respond to ecological forces, and how did ecological forces change different societies? In examining several cases, we will have the opportunity to evaluate claims about famine's

human and/or natural provenance, as well as ideas about famine's relationship to empire-building and state-making. To what extent have waves of hunger and starvation helped to secure the division between the Global South and Global North? To work through these questions, we will have a combination of lectures, discussions, and group work. Enrollment limited to 12. Juniors and seniors only. Instructor permission required. (E) {H} Credits: 4

*Matthew Ghazarian*

Spring, Variable

### **ENV 340 Seminar: Climate Change: Making Social Change Happen—A Calderwood Seminar in Public Writing**

Stop stressing about climate change and learn how to write to make social change happen. This Calderwood Seminar challenges advanced students in an intimate workshop setting to grow as writers and agents of change. We will investigate the coessential relationships between climate change and social change, and explore how writing can open the way towards a more sustainable and just society. Throughout the semester, students will build a writing portfolio that might comprise a policy brief, a blog post, an interview-based profile of a climate activist, and a newspaper op-ed. Classes will include collaborative editing workshops, guest lectures, and other activities to build a strong writing foundation to implement social change. This course may be taken in place of the required environmental integration course ENV 311. Enrollment limited to 12. Juniors and seniors only. Instructor permission required. {N} {S} Credits: 4

*Camille Washington-Ottobre*

Fall, Spring, Variable

### **ENV 400 Special Studies**

Admission by permission of the instructor. Special Studies are open to qualified juniors and seniors and, in appropriate cases, to sophomores. Students are encouraged to contact the instructor in advance of the semester they intend to take this course. Credits: 4

Fall, Spring

### **ENV 430D Honors Project**

Full-year course, 4 credits each semester. Offered every year. Please consult the director of honors for specific requirements and application procedures. Credits: 4

Fall, Spring