

## Environmental Studies

Philip D. Brick, *Co-Director*  
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 (on Sabbatical, Spring 2008)  
 Amy Molitor, *Internships*  
 Kari Norgaard  
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Environmental Studies courses deal with a wide range of contemporary problems associated with the interactions between humans and nature. Coursework is designed to meet the needs of two groups of students: those who choose to major in environmental studies and those who desire knowledge in this area as part of their general education. A primary objective of the program is to aid the student in understanding that environmental problems are multi-causal phenomena, and to develop skills necessary for effective environmental citizenship and leadership.

The Environmental Studies major develops a common core of knowledge through extensive interdepartmental course work, complemented by a concentration in a specific area in either the environmental humanities, sciences, or social sciences. The student may elect one of eight areas of concentration—biology, chemistry, economics, geology, humanities, physics, politics, sociology, or an individually planned major—psychology, for example—in the environmental studies major.

Courses taken P-D-F after the major has been declared may not be used to satisfy requirements for the Environmental Studies major.

The following courses are required of all Environmental Studies majors:

**Environmental Studies courses:** Take the following: ENVS 120 *Introduction to Environmental Studies*; ENVS 220 *Internship*; ENVS 479 *Environmental Citizenship and Leadership*; ENVS 486 *Senior Project Preparation*; ENVS 488 *Senior Project* or 498 *Honors Project*.

The credits for ENVS 488 or 498 will be adjusted to make the total credits for research courses equal three to six, depending on the

discipline, and whether or not the thesis is for honors.

**Humanities courses:** Take a minimum of 2 of the following: ENVS 247 *The Literature of Nature*; ENVS 340 *Environmental Radicals in Literature*; ENVS 347 *The Nature Essay*; ENVS 349 *Regional Literatures of Place: The West and the South*; PHIL 241 *Environmental Aesthetics*; PHIL 250 *Environmental Thinking*; PHIL 255 *Environmental Ethics*; PHIL 345 *Animals and Philosophy*.

**Natural/Physical Science courses:** Take a minimum of three of the following courses from three different departments, including two with a laboratory: BIOL 130 *Conservation Biology* (or BIOL 111 and 112); CHEM 100 *Introduction to Environmental Chemistry* (most science majors substitute CHEM 125 or 126; or 140); GEOL 210 *Environmental Geology* (or GEOL 110 or 120); PHYS 105 *Energy and the Environment* (or PHYS 155 or 156).

**Social Science courses:** Take a minimum of two of the following courses from two different departments: ECON 109 *Principles of Economics and the Environment* (or ECON 107); POL 124 *Introduction to Politics and the Environment* (or POL 287, 309 or 339); SOC 309 *Environmental Sociology* (or SOC 349 or 353).

## Environmental Humanities

Thomas A. Davis, *Associate Professor of Philosophy*  
 Rebecca Hanrahan, *Assistant Professor of Philosophy*  
 Donald Snow, *Senior Lecturer in Environmental Humanities*

Inquiry in Environmental Humanities is guided by two questions: What is the relation between nature and culture? What should this relation be? These questions have become ever more important in the face of growing environmental problems. The Environmental Humanities major uses the traditions of nature writing and environmental philosophy, most especially the ongoing American Nature Writing tradition, to give direction and focus to inquiry

into the values and concepts that an appropriate relation to nature calls for.

The Environmental Humanities major is governed by a subcommittee of the Environmental Studies Committee. In order to insure an intellectually cohesive program, the Environmental Humanities Steering Committee will review and approve each major's plan for coursework leading to a senior thesis.

The senior-year assessment will include a written comprehensive examination administered by the Environmental Humanities Steering Committee and an hour-long oral examination of the senior thesis.

In addition to the courses required of all Environmental Studies majors, the following are required for the **Environmental Humanities** major:

**A.** Take two foundation courses from the following list (courses satisfying this requirement cannot also satisfy the elective requirement): ENGL 347 *American Literature to 1865*; ENVS 247 *The Literature of Nature*; ENVS 349 *Regional Literatures of Place: The West and the South*; PHIL 250 *Environmental Thinking*; PHIL 408A *Studies in American Philosophy: Emerson*; PHIL 408B *Studies in American Philosophy: Thoreau*.

**B.** To fulfill the writing requirement take ENVS 347: *The Nature Essay*.

**C.** To fulfill the critical thinking requirement take one course from: PHIL 107 *Critical Reasoning*; PHIL 117 *Problems in Philosophy*; PHIL 119 *The Examined Life*; PHIL 127 *Ethics*; PHIL 128 *Social and Political Philosophy*; PHIL 210 *Epistemology*; PHIL 230 *History and Philosophy of Science*; PHIL 270 *Metaphysics*.

**D.** Take three elective courses, two of which must be 300 or above, from: ARTH/PHIL 241 *Environmental Aesthetics*; ARTH 248 *Ways of Seeing: An Introduction to Japanese Art and Aesthetics*; ENGL 347 *American Literature to 1865*; ENVS 247 *The Literature of Nature*; PHIL 250 *Environmental Thinking*; PHIL 255 *Environmental Ethics*; ENVS 349 *Regional Literatures of Place: The West and the South*; ENVS 340 *Environmental Radicals in Literature*; PHIL 345 *Animals and Philosophy*; PHIL 408A *Studies in American Philosophy: Emerson*; PHIL 408B *Studies in American*

*Philosophy: Thoreau*.

## Environmental Sciences

Mark Beck, *Associate Professor of Physics*

Robert J. Carson, *Professor of Geology*

Frank Dunnivant, *Associate Professor of Chemistry*

Delbert Hutchison, *Associate Professor of Biology*

The natural and physical sciences provide foundational theories for understanding environmental phenomena in the physical world and support environmental studies by gathering and analyzing baseline data to inform policy decisions. Issues ranging from the effects of pollution, optimal land or water use practices, protections of biodiversity, and effective energy consumption all benefit from insights provided by the natural and physical sciences. Available majors and required courses appear below.

These requirements are in addition to courses required of all Environmental Studies majors.

### Biology-Environmental Studies:

BIOL 111 *Biological Principles*; BIOL 112 *The Biological World*; BIOL 205 *Genetics*; BIOL 215 *Plant Ecology* or BIOL 277 *Ecology*; BIOL 309 *Cell Biology*; BIOL 310 *Physiology*; BIOL 350 *Evolutionary Biology*; BIOL 488 *Research Preparation*; BIOL 489 *Senior Research*; BIOL 490 *Senior Research* or BIOL 498 *Honors Thesis*; CHEM 125, 126, 135, 136, (or 140), 245; MATH 125 or higher calculus course, or MATH 128 or higher statistics course. Courses in physics are recommended.

### Chemistry-Environmental Studies:

CHEM 125, 126 *General Chemistry*; CHEM 135, 136 *General Chemistry Lab I, II* (Note: CHEM 140 is equivalent to CHEM 125, 126, 135 and 136); CHEM 240 *Quantitative Analysis and Chemical Equilibrium*; CHEM 245 *Organic Chemistry I*; CHEM 246 *Organic Chemistry II*; CHEM 250 *Organic Laboratory Techniques*; and CHEM 345 *Physical Chemistry*; CHEM 388 *Environmental Chemistry* or CHEM 320 *Instrumental Methods of Analysis*. Also required are MATH 125, 126, and PHYS 155, 156.

**Geology-Environmental Studies:**

GEOL 210 *Environmental Geology* (or GEOL 110 *The Physical Earth*, or GEOL 120 *Geologic History of the Pacific Northwest*); GEOL 220, *History of the Earth*; GEOL 358 *Field Geology of the Northwest*; GEOL 320 *Sedimentology and Stratigraphy*; GEOL 345 *Mineralogy*; GEOL 346 *Igneous and Metamorphic Petrology*; GEOL 350 *Geomorphology*; GEOL 420 *Structural Geology*; GEOL 470 *Senior Seminar*. Also required are CHEM 125, 126, 135. Strongly recommended are courses in meteorology, physics, calculus, and statistics, and additional courses in biology and chemistry.

**Physics-Environmental Studies:**

PHYS 155, 156 *General Physics I, II*; PHYS 245, 246 *Twentieth-Century Physics*; PHYS 255, 256 *Twentieth-Century Physics Laboratory*; PHYS 335, 336 *Advanced Laboratory*; PHYS 357 *Thermal Physics*. Also required are MATH 125, 126, 225, 235, 236, and 244.

**Environmental Social Sciences**

Philip D. Brick, *Professor of Politics*  
Jan P. Crouter, *Associate Professor of Economics*  
Kari Norgaard, *Assistant Professor of Sociology*

Human activities are at the root of most aspects of environmental degradation from global climate change to toxic waste to habitat loss. Applying social science theories and methods, Environmental Social Science majors explore how human systems affect the natural environment, how decisions to utilize natural resources are made, and how various political strategies might address environmental concerns. Available majors and required courses appear below.

These requirements are in addition to courses required of all Environmental Studies majors.

**Economics-Environmental Studies:**

ECON 109 *Principles of Economics and the Environment* (or ECON 107 *Principles of Economics*); ECON 227 *Statistics for Econom-*

*ics* (or MATH 128 *Elementary Statistics* or MATH 338 *Probability and Statistics*); ECON 307 *Intermediate Microeconomics*; ECON 308 *Intermediate Macroeconomics*; ECON 477 *Environmental and Natural Resource Economics*; and two additional courses in economics, at least one of which is numbered ECON 310 through ECON 490. A minimum requirement of ‘C’ (2.0) is required in ECON 307 and 308.

**Politics-Environmental Studies:**

one of the following: POL 124 *Introduction to Politics and the Environment*; POL 287 *Natural Resource Policy and Management*; POL 309 *Environment and Politics in the “New West”*; and POL 339 *Nature, Culture, Politics*; 490 *Senior Seminar*; plus 20 additional credits in politics, at least eight of which must be in 100- and 200-level courses, and at least eight in 300- and 400-level courses. No more than four credits at the 100/200 or 300/400 levels can be earned in off-campus programs or transfer credits.

**Sociology-Environmental Studies:**

SOC 117 *Principles of Sociology*; SOC 207 *Social Research Methods*; SOC 309 *Environmental Sociology*; SOC 367 *History of Sociological Theory*; one course chosen from either SOC 307 *Human Communities*, or SOC 317 *Population*, or SOC 348 *Technology and Society*, or SOC 349 *Environmental Social Movements*, or SOC 350 *Sociology of Hazards and Disasters*, or SOC 353 *Environmental Justice*; one additional 4 credit course in Sociology; SOC 490 *Current Issues in Sociology*; and SOC 492 *Directed Research*, or SOC 498 *Honors Thesis*.

Environmental Studies majors are encouraged to study for a semester or a year in a program with strong environmental relevance. Particularly appropriate are Whitman College’s field program in environmental studies, Semester in the West; and the School for Field Studies. See Special Programs section in this Catalog.

**120 Introduction to Environmental Studies**

4, 4

Fall: Carson

Spring: Norgaard and Snow

An introduction to interdisciplinary themes in environmental studies, including perspectives from the sciences, social sciences, and humanities. Emphasis is placed on understanding local and regional environmental problems as well as issues of global

environmental concern. Students enrolling in this course will also be required to enroll in Environmental Studies Excursions (EnvS 120). The weekly afternoon excursions cover the length of the Walla Walla drainage basin, from the Umatilla National Forest to the Columbia River. Excursions may include the watershed, the water and wastewater treatment plants, energy producing facilities, a farm, a paper mill, different ecosystems, and the Johnston Wilderness Campus. This course is *required* of all environmental studies majors. All environmental studies majors must pass this course with a minimum grade of C (2.0). First-year students and sophomores only (or consent of instructor).

## 220 Internship

1, 1

**Molitor**

Either an internship with a college, local, regional, national, or international environmental organization, or an independent project devoted to an appropriate topic or problem, for example, developing a green residence hall at Whitman. Interns must write a final report. Required of environmental studies majors during their sophomore or junior year. Students are encouraged to pursue an internship or independent project for the entire academic year and earn two credits. May be repeated for a maximum of four credits. *Prerequisite:* consent of instructor.

## 247 The Literature of Nature

4, x

**Snow**

Students will examine the tradition of nature-writing and literary natural history. Readings will be drawn from classics in the field (Gilbert White, Darwin, Emerson and Thoreau, Burroughs and Muir, Leopold, Rachel Carson, Loren Eiseley, Mary Hunter Austin), and from the best contemporary nature-writers (Terry Tempest Williams, Ed Abbey, Annie Dillard, Ellen Meloy, Wendell Berry, David Quammen). Lectures and discussions will trace how nature-writing has mirrored the evolution of social, cultural, political and scientific perspectives on nature. Distribution area: humanities.

## 260 Regional Studies

1-3

A study of a specific geographical region using a multidisciplinary approach. Regions covered may include Alaska, western Canada, the northwest or southwest U.S., Hawaii, or Latin America. Lectures, readings, and discussions in various disciplines, concentrating mainly in the natural and social sciences, will precede a one- to three-week field trip. One or more examinations or papers will be required. May be repeated for credit with focus on a different region. *Fee:* variable. *Prerequisite:* consent of instructor. The current offering follows.

## 260W Northwestern Wyoming

x, 1

**Carson**

A seminar on and field trip to the greater Yel-

lowstone ecosystem in northwestern Wyoming and adjacent Montana. Focus on forests, wildlife, and the geologic record from Precambrian through the Cenozoic, including glaciation and volcanism. Field trip in late May/early June. *Co-requisite:* Geology 158W. *Fee:*

## 340 Environmental Radicals in Literature

4; not offered 2007-08

Much contemporary environmental thought provides a radical critique of industrial and post-industrial society, but in earlier times the first true environmental thinkers challenged systems of agriculture, market economics, land ownership, and urbanism. What was once radical moved toward the center. In this course, students will examine the radical tradition of environmental thought as it has been expressed in literary and other texts. Bioregionalism, ecofeminism, agrarian communalism, Luddism, Deep Ecology, eco-centrism, and other radical environmental expressions will be examined critically. Works by Hawthorne, Thoreau, Ed Abbey, Kirk Sale, Gary Snyder, Susan Griffin, Barbara Kingsolver, Paul Shepard, David Abram and others may be included. *Offered* in alternate years. Distribution area: humanities

## 347 The Nature Essay

x, 4

**Snow**

The class will be conducted as a non-fiction prose writing workshop in which students read and comment on each others' writing. After examining published works chosen as models, students will write essays in the nature-writing tradition, selecting approaches from a broad menu. Nature-writing includes literary natural history; "science translation writing"; essays on current environmental issues; personal essays based on engagement with land, water, wildlife, wilderness; travel or excursion writing with a focus on nature; "the ramble"; and other approaches. Students will learn how contemporary nature-writers combine elements of fiction, scientific descriptions, personal experience, reporting and exposition into satisfying compositions. Distribution area: humanities or fine arts. *Prerequisite:* consent of instructor.

## 349 Regional Literatures of Place: The West and the South

4, x

**Snow**

The literatures of both the American West and the American South often reflect political struggles. Issues of federalism and states rights, economic dependency on the land, the rapid and radical transformation of an indigenous economy and ecology, and the stain of history stand in the foreground. This seminar will examine literary regionalism by focusing on southern and western writers whose works emanate from and reinforce the ethic and spirit of place. Several of the "Southern Agrarians" may be included along with William Faulkner, Eudora Welty and Flannery O'Connor. Western writers may include Bernard DeVoto, Wallace Stegner, Mary Clearman Blew, John Nichols, Larry

Watson and William Kittredge. In addition, films will be used to illustrate the peculiar burden of the contemporary western writer. *Offered* in alternate years. Distribution area: humanities.

### 367, 368 Special Topics

1-4, 1-4

An investigation of environmentally significant issues centered on a common theme. The course may include lectures by off-campus professionals, discussions, student presentations, and field trips.

### 367A ST: Introduction to Geographic Information Systems

3, 3

**Molitor**

An introductory course to provide students with an overview of the general principles of GIS and practical experiences with environmental applications. Specifically, this course seeks to provide students with (1) an overview of the uses of GIS in the environmental arena, (2) a basic understanding of the concepts central to GIS, (3) knowledge of the basics of ArcGIS 9 through hands-on experience, and (4) practical experience in design and implementation of a simple GIS project. Students are not expected to have prior experience with GIS, however an understanding of basic computer applications is required. One lecture and one three-hour meeting per week. *Prerequisite:* consent of instructor.

### 367B ST: People and Nature in Hells Canyon

4, x

**Brick**

This course is an intensive research and writing seminar on human-nature relationships in the Hells Canyon region of northeastern Oregon. Students will review ethnographic interview data on eight or nine individuals who have shown outstanding commitment to, and understanding of, the natural history of the Hells Canyon region. We will also conduct background research on the geology, flora, and fauna of the region. The course will involve at least one field trip to Hells Canyon, and two intensive writing workshops. The goal of the course is for each student to complete a high quality essay on a specific species or element of the region's natural history, as seen through the eyes of a person intimately familiar with it. In the writing workshops, students will also have the opportunity to work closely with ecologist Dr. Mary O'Brien. One meeting per week. *Prerequisite:* Consent of Instructor. Distribution area: humanities.

### 368 ST: Social Ecology: Agriculture, Climate, and Conservation

x, 3

**Bader**

Soils provide nutrients, water and support for growing plants, host an amazing variety of organisms, and even influence global climate. This course will examine aspects of soil ecology relevant to environmental studies, especially focusing on soils as functional components of agricultural ecosystems and on the role of soils in the global biogeochemical cycling of organic carbon. We will combine lectures,

discussions, field trips, and readings from the primary literature.

### 390 Independent Study

1-4, 1-4

**Staff**

A series of readings or a program of individual research of approved environmental topics. *Prerequisite:* consent of instructor.

### 401 Water Resources

3; not offered 2007-08

A seminar on water resources, including surface and ground water, from the perspectives of hydrology and environmental management. We will study the hydrologic cycle, water rights, water transfers, water projects (e.g., dams and reservoirs), ground water depletion, and water pollution. Much of our discussion will focus on water problems in western United States. Each student will write and present a research paper on water use and conflict in a specific part of the world. Field trips. *Prerequisite:* consent of instructor. *Recommended prerequisite:* Environmental Studies 120. Distribution area: science. *Offered* in alternate years.

### 479 Environmental Citizenship and Leadership

2, x

**Brick and Parker**

An intensive course in environmental problem solving, with an emphasis on developing skills necessary for effective environmental citizenship and leadership. Students will first engage in readings and discussions to enhance their understanding of environmental decision-making processes and institutions. Then they will work individually and in teams to study active environmental disputes, with the ultimate aim of recommending formal solutions. This course is required of, and open only to, environmental studies majors in their senior year. Field trips and guest presentations may be included.

### 486 Senior Project Preparation

1, x

**Staff**

This required course prepares environmental studies majors for their senior project. Students are expected to develop research proposals and to present their work to others for discussion and refinement. Must be taken in the fall of the senior year.

### 488 Senior Project

1-3, 1-3

**Staff**

The student will investigate an environmental issue of his or her own choice and prepare a major paper. The topic shall be related to the student's major field of study and must be approved by both major advisers. Required of all senior environmental studies majors, with the exception of those completing an honors project.

### 498 Honors Project

1-3, 1-3

**Staff**

An opportunity for qualified environmental studies senior majors to complete a senior project of honors

quality. Requires the student to follow application procedures following the guidelines for honors in major study. Students enrolled in this course must also participate in and meet all requirements of the Environmental Studies 488 course.

The following are abbreviated descriptions of required and/or recommended Environmental Studies courses. See detailed descriptions under relevant departmental heading in this Catalog.

**Biology 111 Biological Principles** 4

An examination of biology from the molecular and cellular perspective. The accompanying lab will illustrate major features of biology common to all life.

**Biology 112 The Biological World** 4

The six biological kingdoms: Archaeobacteria, Eubacteria, Protista, Fungi, Plantae, and Animalia. The evolutionary history of living organisms is traced from the most simple prokaryotes to the highly complex plants and animals. Parallel trends and adaptations are discussed in addition to the unique features of each group.

**Biology 122 Plant Biology** 3

A predominantly field-oriented course for the non-major that covers basics of plant biology, ecological adaptations to different habitats, current plant issues, and the identification of local plants to family; a plant collection is required.

**Biology 125 Genes and Genetic Engineering** 3

An introduction to the principles of genetics, and to how genetics is applied in medicine, agriculture, forensics, and biotechnology. Social, ethical, political, and economic issues related to genetics and genetic engineering will be discussed.

**Biology 127 Nutrition** 3

An introduction to the required nutrients and their food sources, their metabolism and eventual functions and fates in the body. Principles will then be applied to specific life stages and circumstances. Psychological, cultural, agricultural, economic, local and global issues surrounding food will be discussed.

**Biology 130 Conservation Biology** 4

Designed for non-majors, this course introduces basic concepts in ecology, genetics, and evolution and applies them to the conservation of diversity. We also read a number of classic writings in conservation and discuss the ethical, and logistical implications of conservation.

**Biology 215 Plant Ecology** 4

The diverse adaptations of plants to their abiotic and biotic environments from ecological and evolutionary perspectives. Topics will include the effects of climatic factors (water, light, temperature) and soils on plant morphology, physiology, growth, and reproduction, and the complex relationships of plants with other forms of life.

**Biology 277 Ecology** 4

The interdependent relationships of organisms to one another and to their environment. The concepts and principles of the following subjects are dealt with in the course: the ecosystem, energy in the ecosystem, biogeochemical cycles, abiotic factors, communities, biomes, population dynamics, behavior, conservation, and pollution.

**Biology 350 Ecology** 4

This course addresses the mechanisms and patterns of evolution to give students an appreciation for the applicability of the field to current issues involving biology.

**Chemistry 100 Introduction to Environmental Chemistry** 3

Application of chemistry to the understanding of radioactivity, air and water quality, drugs and toxins, and energy production and use. No chemistry background presumed.

**Chemistry 125 General Chemistry I** 3

First semester of the year-long course in introductory chemistry for science majors. Atomic and molecular structure, bonding, physical states of matter, stoichiometry, aqueous chemistry and introductory organic and biochemistry.

**Chemistry 126 General Chemistry II** 3

Second semester of the year-long course in introductory chemistry for science majors. Thermodynamics, equilibria, kinetics, oxidation-reduction, elemental properties, nuclear chemistry.

**Chemistry 135 General Chemistry Lab I** 1

Qualitative, gravimetric and volumetric analyses, molecular structure, synthesis, acids and bases, and thermochemistry.

**Chemistry 136 General Chemistry Lab II** 1

Kinetics, synthesis, analysis, spectrophotometry and discovery-based experiments.

**Chemistry 388 Environmental Chemistry and Science** 4

This course will examine the reactions and transport of chemical species in aquatic, terrestrial and atmospheric environments. The laboratory portion will concentrate on sampling design, field sampling methods, and data analysis.

**Economics 107 Principles of Economics** 4

An introductory course providing basic theoretical tools to enable students to analyze contemporary economics society. Topics include production, distribution and pricing of goods and services; determination of the level of national income; monetary and fiscal policies; and international trade and finance.

**Economics 109 Principles of Economics and the Environment** 4

This introductory economics course provides the same coverage of topics as Economics 107, but with a special emphasis on applying concepts to environmental and natural resource issues. Topics include production, distribution, and pricing of goods and services; determination of the level of national income; government monetary and fiscal policies; and international trade.

**Economics 277 Global Environmental and Resource Issues** 4

The tools of economic analysis are applied to global environmental and natural resource issues such as global pollution, the relationship of trade and the environment, sustainable economic growth and resource scarcity, economic growth and the environment, and natural resource conflicts.

**Economics 347 Transportation and the Environment** 4

The transportation sector has experienced extraordinary growth in the last fifty years. After reviewing measures and estimates of the environmental and other costs not reflected in

the prices of transport services, we consider the efficiency of policies to contain these costs and some important side effects of the policies.

#### **Economics 477 Environmental and Natural**

##### **Resource Economics 4**

A course providing a general framework for understanding how market failure contributes to pollution and inefficient resource use, and how policies might remedy these problems. The framework is then applied to domestic environmental and natural resource issues.

##### **Geology 130 Weather and Climate 3**

An introductory course in meteorology that emphasizes interactions between Earth's atmosphere and humans. Subjects include: global atmospheric circulation patterns, weather analysis and forecasting, origins of destructive weather phenomena, world climates, and human alteration of the atmosphere. Three lectures per week. Field trip required.

##### **Geology 180 Oceanography 3**

An introduction to the geological, physical, and chemical characteristics of the world ocean. Subjects include: plate tectonics, bathymetry, sea floor sedimentation, ocean currents and weather, waves, tides, and coastal processes.

##### **Geology 210 Environmental Geology 4**

Geologic aspects of the environment: man's effect upon and interaction with such phenomena as landslides, erosion and deposition of sediments, surface waters, groundwater, volcanism, earthquakes, and permafrost.

##### **Geology 450 Late Cenozoic Geology and Climate Change 3**

The geology of the last few million years of earth history, including changes in flora and fauna. What are the causes of ice ages and the alternating glaciations and interglaciations within them? What are the roles of nature and humans in the current global climate change?

##### **History 262 Environmental History of the U.S. 4**

A course on land and the ways Americans have interacted with it from the colonial era through the twentieth century. Themes to be explored include attitudes toward natural resources from trees to minerals; the environmental impacts of settlement, industrialization, urban growth, mining, agriculture, and water use; the emergence of scientific and public health professions dealing with environmental issues; the role of legal, political, and social structures in environmental issues; and movements to preserve "natural" environments or curtail the exploitation of natural resources.

##### **Philosophy 127 Ethics 4**

This course consists of the careful reading and discussion of several classical texts of moral philosophy. The aim is to introduce students to moral philosophy, rather than to solve practical problems in ethics as important as these are. Nonetheless, this philosophical study should, as a by-product, enhance the students' ability to deal intelligently with ethical issues in their personal and social lives.

##### **Philosophy 128 Social and Political Philosophy 4**

An introductory examination of social and political problems from a philosophical perspective. The course deals with themes such as the nature and foundation of the state, law, justice, liberty, conscience, alienation, and rights.

##### **Philosophy 241 Environmental Aesthetics 4**

An attempt to overcome the traditional Western opposition between nature and culture by exploring the question: What is a garden? Special attention will be given to Japanese gardens with a final project of designing your own garden.

##### **Philosophy 250 Environmental Thinking 4**

This course will explore different ways of conceiving our relation to nature using paradigms from ancient, medieval, and modern philosophy as well as readings from contemporary sources.

##### **Philosophy 255 Environmental Ethics 4**

Are plants and animals or even the environment as a whole worthy of our moral consideration? If they are worthy of such consideration, on what basis are they so deserving? In answering these questions, we will consider the works of such authors as Aldo Leopold, Peter Singer, and Arne Naess.

##### **Philosophy 345 Animals and Philosophy 4**

Exploration of the moral and metaphysical status of animals. Are animals merely organic machines or are they conscious beings? Can they think or feel pain? Do they possess beliefs? More importantly, do animals have rights that oblige us to protect them from harm?

##### **Physics 105 Energy and the Environment 3**

This course examines the physical principles that govern energy transformations. It will focus on the use of energy in the world, specifically its production, transportation, consumption, and the implications this use has for the environment.

##### **Politics 119 Whitman in the Global Food System 4**

This community-based course moves between the historical and theoretical study of the global food system and engaged research projects in the Walla Walla region. Topics range from debates over U.S. farm subsidies to the gender, class, and ecological dynamics of export agriculture in the Third World; from the causes of famine to the politics of obesity.

##### **Politics 124 Introduction to Politics and the Environment 4**

An introduction to key concepts in the study of politics, using environmental issues as illustrations. Designed for first- and second-year students, this course encourages critical thinking and writing about key political concepts, such as power, equality, liberty, and community.

##### **Politics 147 International Politics 4**

An introduction to a variety of approaches useful in understanding international politics and international political problems, including war, global environmental degradation, poverty, and ethnic conflict.

##### **Politics 287 Natural Resource Policy and Management 4**

An introduction to basic problems in natural resource policy-making in the American West. We focus on forests, public rangelands, national parks, biodiversity, energy, water, and recreation. We also review a variety of conservation strategies, including land trusts, incentive-based approaches, and collaborative conservation.

**Politics 300 The Politics of Development 4**

The purpose of this course is to critically analyze the dominant conceptualizations of third world development, as well as development policy-making.

**Politics 309 Environment and Politics in the "New West" 4**

This seminar explores the changing political landscape of the American West, with emphasis on changing environmental values and on conflicts over natural resource policy. What are the causes of these conflicts, and what kinds of approaches will be necessary to address them? A field trip is required. One meeting per week.

**Politics 339 Nature, Culture, Politics 4**

This seminar explores changing understandings of nature in American culture, the role of social power in constructing these understandings, and the implications these understandings have for the environmental movement.

**Politics 373 Political Ecology of Latin America 4**

This course examines the environmental politics of Latin America. It focuses on struggles over different natural resources—water, land, minerals, forests, and genetic material—with an eye toward understanding the complex relations between nature and society.

**Politics 377 Environmental Politics 4**

A seminar exploring the relation between politics and the environment and the politics of the American environmental movement.

**Religion 227 Christian Ethics 4**

This course explores the nature of Christian ethical judgement (ethical norms, the nature of ethical reasoning and argument) and a number of contemporary ethical issues, such as medical ethics (including abortion and genetic research), war, and pacifism.

**Sociology 307 Human Communities 4**

An investigation of the relationship between nature and community by raising questions such as: which forms of community best support the resolution of environmental problems? The course draws from sociological theories of community and the city, case studies taken from the developed and developing worlds, and contacts with local community organizations.

**Sociology 309 Environmental Sociology 4**

This course will review sociological theory on the causes and consequences of ecological degradation and resource scarcity. Topics will include: specific local and global ecological problems, theories on political economy of the environment, the treadmill of production, environment and risk, the sociology of environmental science, globalization and environmental movements.

**Sociology 317 Population 4**

An introduction to population theories and to sociological research on population growth, distribution, and composition within a world context. Problems of food production and distribution, agricultural development, and the environmental consequences of different farming systems will be analyzed

in relation to population changes and the larger processes of social change.

**Sociology 348 Technology and Society 4**

A critical approach to the social culture and history of technology. Topics vary from war and mass communications technologies to the impacts of bio-research and power generation. A number of interdisciplinary materials will be used, ranging from technical, ethnographic, and historical studies, to literature, science fiction, and philosophy.

**Sociology 349 Environmental Social Movements 4**

Why do social movements happen? Why do some social movements succeed in producing change while others fail? How do different experiences across gender, race and class inform the emergence, goals and dynamics of environmental social movements? This course will use micro and macro sociological theory to study social change, reform and collective behavior using environmental movements and environmental backlash movements as case studies.

**Sociology 350 Sociology of Hazards & Disasters 4**

This course analyzes the ways in which human communities prepare for, respond to, and bring about calamitous environmental change. Topics include the social/natural interface, risk analysis, environmental justice issues, and myths about human behavior in emergencies.

**Sociology 353 Environmental Justice 4**

Local and worldwide ecological degradation including deforestation, declining salmon runs, and global warming has human consequences: people lose jobs, face toxic exposure and are caught in the midst of conflicts over scarce resources. The concepts of environmental racism and environment justice represent the disproportionate exposure to environmental degradation faced by the poor, women, people of color and citizens of the South.