ENVIRONMENTAL STUDIES

Faculty

William Fleeger, Ph.D. • Environmental Studies Chair (Non-Tenure Track)

Kurt Ingeman, Ph.D. • Environmental Studies

Affiliated Faculty

Liz Atkinson, Ph.D. • Chemistry
David V. Fiordalis, Ph.D. • Religious Studies
Robert Gardner, Ph.D. • Sociology
Eric Schuck, Ph.D. • Economics
David Sumner, Ph.D. • English
Chad Tillberg, Ph.D. • Biology
Jeremy Weisz, Ph.D. • Biology
Joe Wilkins, M.F.A. • English

Environmental Studies is an interdisciplinary program that focuses on the relationships between humans and the natural world. Students develop a deep awareness of the highly complex and dynamic nature of the world we inhabit, including interactions among human populations, the biological and physical environment, technology, social organization, and culture. Our location in the Pacific Northwest is exceptionally diverse and affords rich opportunities for study and involvement.

Addressing environmental issues draws on almost every field in the liberal arts curriculum. For this reason the core of the Environmental Studies major features a cross-disciplinary introductory course sequence along with requirements in the humanities and the social and natural sciences.

Students in the major choose from one of three focus areas: environmental science, environmental policy, or environmental humanities. In each focus area, students select from a variety of humanities and social and natural science electives. Students in all three focus areas also participate in a yearlong community-based capstone sequence that includes a focus on applied research methods and completion of an interdisciplinary project in cooperation with a community partner.

Programs

- Environmental Studies Major with Science Focus (http://catalog.linfield.edu/programs-az/arts-sciences/environmental-studies/environmental-studies-major-science-focus/)
- Environmental Studies Major with Policy Focus (http://catalog.linfield.edu/programs-az/arts-sciences/environmental-studies/environmental-studies-major-policy-focus/)
- Environmental Studies Major with Humanities Focus (http://catalog.linfield.edu/programs-az/arts-sciences/environmental-studies/environmental-studies-major-humanities-focus/)
- Environmental Studies Minor (http://catalog.linfield.edu/programs-az/arts-sciences/environmental-studies/environmental-studies-minor/)

COURSES

Paracurricular Courses

ENVS 030 NATURAL HISTORY OF THIS PLACE WE INHABIT (1 credit)
Understanding the bio-physical world we inhabit via experiential learning on field trips to local habitats. Minimum of 35 hours of field trips. May be repeated with different content, though counted only once toward the Environmental Studies major or minor.
Total Course fees: $50.00
(EXPERIENTIAL LEARNING)

ENVS 040 COMMUNITY SERVICE (1 credit)
Community activity helping with such environmentally-related programs as parks, recycling, land-use planning, green way clean-up, and marking of bicycle and walking paths. Minimum of 35 hours of service. May be repeated with different content.
(EXPERIENTIAL LEARNING)

ENVS 090 ENVIRONMENTAL ISSUES FORUM (1 credit)
Reports and readings on contemporary environmental issues. Weekly discussions in small seminar groups. May be repeated for credit.
(EXPERIENTIAL LEARNING)

Environmental Studies Courses

ENVS 198 SPECIAL TOPICS: JAN TERM TRAVEL (4 credits)
Topics vary according to faculty availability and interest. May be repeated for credit with different topics.
Prerequisites: IDST 098 previous fall.
Typically offered: January Term

ENVS 200 INTRODUCTION TO ENVIRONMENTAL SCIENCE (4 credits)
Introducing the scientific method as a framework to study the natural world; examination of human impacts on the environment, from local to global scales; using science as a foundation to address and reduce environmental problems. Not for ENVS major. OFFERED THROUGH ONLINE AND CONTINUING EDUCATION (OCE) ONLY.
(NATURAL WORLD)

ENVS 201 ENVIRONMENTAL SCIENCE (4 credits)
Study of how humans are altering the planet. Topics include climate change, human populations, biodiversity, terrestrial and aquatic ecosystems, agricultural systems, energy, and waste. Uses scientific method to study the world and as a foundation to solve environmental problems. Lecture and 3 hours of laboratory weekly. Required for ENVS majors.
Total Course fees: $60.00
Typically offered: Fall Semester
(NATURAL WORLD)

ENVS 202 ENVIRONMENTAL GOVERNANCE (4 credits)
Introduction to historical and legal frameworks for addressing environmental issues as well as the common and emerging policy approaches by which communities, businesses, and governments make decisions relating to the environment. Investigation of the multidimensional nature of environmental problems and formulation of policy solutions considering the scientific, social and political context.
Typically offered: Spring Semester
(INDIVID/SYSTEMS/SOCIETIES)

ENVS 203 HUMAN ADAPTIVE STRATEGIES (4 credits)
Social scientific findings and ways of understanding humanity's place in nature and our current ecological predicament; causes and consequences (environmental, demographic, economic, political, and cultural) of humankind's transition from food foraging to Neolithic and now industrial adaptive strategies; scientific, policy and cultural implications and aspects of these changes and interactions through case studies at global, regional and local scales. (Listed as ENVS 203 and SOAN 203.)
Total Course fees: $60.00
Typically offered: Spring Semester, Even Years
(GLOBAL PLURALISM, INDIVID/SYSTEMS/SOCIETIES)

ENVS 207 ENERGY AND SUSTAINABILITY (ALSO LISTED AS PHYS 207) (3 credits)
Introduction to the scientific principles of energy technologies with a focus on assessing sustainability including environmental, climate, and life-cycle analysis. A wide range of renewable and nonrenewable energy sources will be studied, along with our use of energy for applications including electricity, transportation, heat, materials, and food production. Quantitative methods for making comparisons will be emphasized. The outlook for various renewable energy technologies will be discussed. Offered as stacked course with PHYS/ENVS 307. May not take both PHYS/ENVS 207 and PHYS/ENVS 307 for credit.
Typically offered: Fall Semester, Even Years
(QUANTITATIVE REASONING)

ENVS 210 PRINCIPLES OF SUSTAINABILITY (4 credits)
Developing a sustainable foundation for our future is key in stabilizing our economy, providing social equity for all and reestablishing a healthy and thriving environment. Gain insights into how you can find a balance with nature through sustainable living and share that knowledge with those around you. Topics include preparing for a changing climate, maintaining water quality, building a sustainable food system, developing a clean transportation and power network, redesigning products and buildings for a green future, environmental justice and reducing or eliminating waste. OFFERED THROUGH ONLINE AND CONTINUING EDUCATION (OCE) ONLY.
(INDIVID/SYSTEMS/SOCIETIES)

ENVS 230 INTRODUCTION TO GIS (4 credits)
Geographical Information Systems concepts and techniques for creating maps and analyzing spatial and attribute data. Emphasis on using GIS to understand relationship between humans and the natural environment. Lecture and lab.
Prerequisites: BIOL 285 or MATH 140 or consent of instructor.
Typically offered: Spring Semester
(INDIVID/SYSTEMS/SOCIETIES, QUANTITATIVE REASONING)

ENVS 250 ENVIRONMENT, SOCIETY, AND CULTURE (ALSO LISTED AS SOAN 250) (4 credits)
Relationship between social groups and natural and human-built environment, human-induced environmental decline, sustainable alternatives, environmentalism as social movement, public environmental opinion, environmental racism and classism. Social dimensions of built environment including urban sprawl, development, place, space, community, and urban design.
Typically offered: Spring Semester, Odd Years
(INDIVID/SYSTEMS/SOCIETIES)

ENVS 300 TOPICS IN ENVIRONMENTAL POLICY (3 credits)
Analysis of public policy issues pertaining to the environment such as: pollution control, energy production and conservation, greenhouse gas emissions, ozone depletion, acid rain, riparian area preservation, land use planning, government regulation versus free market environmentalism, Endangered Species Act. May be repeated as topics vary.
Prerequisites: MATH 140 or ECON 210 or consent of instructor.
(INDIVID/SYSTEMS/SOCIETIES)

ENVS 302 SHORELINE ECOLOGY (3 credits)
This course introduces the nearshore ocean environment, the oceanographic and ecological processes affecting coastal organisms, and the diversity of shoreline habitats on the Oregon coast. The course includes overnight stays at the Oregon Institute of Marine Biology (OIMB) and the Hatfield Marine Science Center (HMSC), where students will participate in authentic marine research and learn about current conservation challenges from the experts that study them. COURSE FEE FOR MATERIALS AND TRAVEL.
Total Course fees: $100.00
Typically offered: Spring Semester, Alternate Years
(NATURAL WORLD)

ENVS 304 CLIMATE CHANGE: CAUSES, CONSEQUENCES, AND MITIGATION (3 credits)
Climate change and physical, chemical, ecological, sociological, and economic consequences. Analysis of historical natural variations plus recent anthropogenic causes. Examination of the roles of individuals, organizations, and governments, plus industry, transportation, energy production, and land conversions, initially in contributing to these changes as well as recent efforts to slow them down.
Typically offered: Fall Semester
(NATURAL WORLD)

ENVS 305 ENVIRONMENTAL ISSUES AND THE PHYSICAL SCIENCE (3 credits)
An application of the physical sciences, principally the earth sciences, to understanding human impact on the earth, including such topics as radioactivity, nuclear power and nuclear waste, hazards from earthquakes, volcanoes, mining and toxic chemical wastes, water pollution, acid rain, the greenhouse effect, desertification, and problems posed by increasing urbanization and intensive agriculture. OFFERED THROUGH ONLINE AND CONTINUING EDUCATION (OCE) ONLY.
(NATURAL WORLD)

ENVS 307 ENERGY & SUSTAINABILITY (ALSO LISTED AS PHYS 307) (4 credits)
Introduction to the scientific principles of energy technologies with a focus on assessing sustainability including environmental, climate, and life-cycle analysis. A wide range of renewable and nonrenewable energy sources will be studied, along with our use of energy for applications including electricity, transportation, heat, materials, and food production. Quantitative methods for making comparisons will be emphasized. The outlook for various renewable energy technologies will be discussed. This course will include higher level scientific modeling and analysis than ENVS 207 and is recommended for science and mathematics majors. May not take both PHYS/ENVS 207 and PHYS/ENVS 307 for credit. OFFERED THROUGH ONLINE AND CONTINUING EDUCATION (OCE) ONLY.
Prerequisites: One of MATH 175, PHYS 210, CHEM 210, ENVS 201, or consent of instructor; a year-long laboratory science course is recommended.
Typically offered: Fall Semester, Even Years
(QUANTITATIVE REASONING)

ENVS 308 WATER RESOURCES (3 credits)
Focus on the importance of water, the variety of surface and groundwater sources and the extensive use we make of them in transportation, energy, industry, agriculture and municipalities. Impacts on water resources, including overuse and pollution, along with recent efforts to improve water quality and conservation, will also be considered. OFFERED THROUGH ONLINE AND CONTINUING EDUCATION (OCE) ONLY.
(NATURAL WORLD)

ENVS 309 RELIGION AND NATURE (ALSO LISTED AS RELS 306) (4 credits)
Examination of how people have conceived the relationship between humanity and the natural world, and how people have found religion in nature. Topics include historical, ethical, and philosophical questions, as well as contemporary environmental and ecological concerns. Selections may be drawn from Asian religions (Buddhist, Hindu, Daoist, Shinto, etc.), Abrahamic religions (Christianity, Judaism, Islam), indigenous (native American, African) traditions, or other traditional or non-traditional selections. Opportunities for experiential learning and for students to articulate and evaluate their own perspectives.
(GLOBAL PLURALISM, ULTIMATE QUESTIONS)

ENVS 310 ENERGY RESOURCES: TRANSITIONS (3 credits)
Historical and contemporary uses of energy. Examination of fossil fuels and developing renewable energy sources. Intertwining of physics, technology, economics, social factors, climate change, and policies as they impact the rate of transitions to cleaner energy options. 3 credits.
Typically offered: Fall Semester, Annually

ENVS 325 ENVIRONMENTAL LAW AND REGULATION (4 credits)
Focus on significant federal environmental environmental issues and controversies. Introduction of current trends in environmental regulation including devolution of federal authority and the increasing role of state and local governments in environmental law and policy.
Prerequisites: ENVS 202.
Typically offered: Fall Semester, Odd Years

ENVS 342 FRESHWATER ECOLOGY AND CONSERVATION (4 credits)
This course introduces the ecology and conservation of inland waters, including lakes, wetlands, rivers, and streams, with a focus on Oregon's freshwater habitats. We will explore the unique physical and chemical properties that characterize freshwater, and the challenges for organisms making a living in lentic (lake) or lotic (stream) systems. The course combines lecture, invited speakers, laboratory, and field work to allow students a rich experience of exploring the ecology of freshwater environments, and how humans can work to restore the natural processes that allow freshwater ecosystems to flourish.
Prerequisites: ENVS 201 *or* BIOL 210; BIOL 285
Typically offered: Spring Semester, Alternate Years

ENVS 357 ENVIRONMENTAL COMMUNICATION AND ADVOCACY (ALSO LISTED AS JAMS 357 AND COMM 357) (4 credits)
Investigates the challenges and methods for informing the public and engaging stakeholders in addressing environmental problems. Students practice a variety of communication and engagement techniques as well as create and critique environmental messages, public participation strategies and information dissemination styles for multiple audiences and purposes.
Prerequisites: Sophomore Standing. One of ENVS 202, JAMS 150, COMM 255 or consent of instructor.
Typically offered: Fall Semester, Even Years
(INDIVID/SYSTEMS/SOCIETIES)

ENVS 360 FOREST ECOLOGY AND MANAGEMENT (4 credits)
Basic principles of forest ecology with emphasis on Pacific Northwest. Management of forests with reference to ecological, political and economic factors. Lecture, laboratory and field trips.
Total Course fees: $60.00
Prerequisites: ENVS 201 or BIOL 210 and BIOL 285 or MATH 140.
Typically offered: Spring Semester, Even Years
(NATURAL WORLD)

ENVS 380 CONSERVATION BIOLOGY (4 credits)
Investigation into scientific, social, and political factors that affect species diversity. Includes examination of population biology, ecology, and evolution in relation to the emergence, extinction, and preservation of species. Explores the role of the scientist in society with consideration of the history of science, the history of the environmental movement, environmental ethics, and politics. Lecture and laboratory.
Total Course fees: $60.00
Prerequisites: ENVS 201 or BIOL 210.
Typically offered: Spring Semester, Odd Years
(NATURAL WORLD)

ENVS 398 SPECIAL TOPICS: JAN TERM TRAVEL (4 credits)
Topics vary according to faculty availability and interest. May be repeated for credit with different topics.
Prerequisites: IDST 098 previous fall.
Typically offered: January Term

ENVS 410 SUSTAINABILITY PRACTICUM (3 credits)
Want to make a difference in your community? Propose, design, implement and evaluate an individualized applied learning experience in a local organization to enhance its sustain- ability program and/or reassess its environmental impact. Gain valuable experience in proposal writing, leadership, project management, engagement and assessment while utilizing your knowledge and skills in sustainability. OFFERED THROUGH ONLINE AND CONTINUING EDUCATION (OCE) ONLY.
Prerequisites: ENVS 200 or 201, 202, 210, and consent of instructor.

ENVS 430 EPIDEMIOLOGY (3 credits)
Introduction to epidemiology of disease. Acute and chronic diseases are discussed from population point of view. Topics include modes of transmission, outbreak investigation, surveillance of acute infections and chronic diseases, and microbial and environmental causes. (Listed as ENVS 430 and HHPA 430.) Students who have earned credit for HSCI/ENVS 440 may not enroll in this course.
Prerequisites: ENVS 201 or BIOL 210 and BIOL 285 or MATH 140.
Typically offered: Fall Semester, Odd Years
(QUANTITATIVE REASONING)

ENVS 439 PEER INSTRUCTION (3-4 credits)
Opportunity for outstanding students to assist faculty in the classroom and laboratory. May not be repeated for credit.
Prerequisites: Application and consent of instructor.
(EXPERIENTIAL LEARNING)

ENVS 450 ENVIRONMENTAL HEALTH (3 credits)
Study of the effects of water and air pollution, food additives, pesticides, heavy metals, organic solvents, mycotoxins, and radiation. Examines concepts of toxicology, epidemiology, risk assessment, safety control, and environmental law. (Listed as ENVS 450 and HHPA 450.)
Prerequisites: ENVS 201 or BIOL 210.
Typically offered: Fall Semester, Even Years
(GLOBAL PLURALISM, INDIVID/SYSTEMS/SOCIETIES)

ENVS 460 SENIOR CAPSTONE I: ENVIRONMENTAL RESEARCH METHODS (4 credits)
Semester one in a two-semester capstone sequence. Begin work on a project with a community partner resulting in a site assessment. Examine basic principles in conducting research in environmental studies, both science and policy. Develop proficiency in research design, data collection and analysis, written and oral presentation of findings. Lecture and laboratory.
Total Course fees: $60.00
Prerequisites: BIOL 285 and Senior Standing. Lab required.
Typically offered: Fall Semester
(MAJOR WRITING INTENSIVE)

ENVS 470 SENIOR CAPSTONE II: ENVIRONMENTAL PROJECT (4 credits)
Second semester in a two-semester senior capstone sequence. A community-based course where students integrate science and policy and explore environmental issues in-depth. Students apply research, critical thinking and communication skills to complete the project begun in ENVS 460. Lecture and laboratory.
Total Course fees: $60.00
Prerequisites: ENVS 460 and Senior Standing. Lab required.
Typically offered: Spring Semester
(MAJOR WRITING INTENSIVE)

ENVS 480 INDEPENDENT STUDY (1-5 credits)
Supplemental work in environmental study for advanced students with adequate preparation for independent work.

ENVS 487 INTERNSHIP (2-5 credits)
Opportunity to gain practical experience in an organization involved in environmental work.
(EXPERIENTIAL LEARNING)

ENVS 490 INDEPENDENT RESEARCH OR THESIS (2-5 credits)
Field, laboratory, or library research on a topic of interest to the student, requiring a substantial written report. For advanced, self-reliant students.

ENVS 498 SPECIAL TOPICS: JAN TERM TRAVEL (4 credits)
Topics vary according to faculty availability and interest. May be repeated for credit with different topics.
Prerequisites: IDST 098 previous fall.
Typically offered: January Term