

ENVIRONMENTAL SCIENCE (ENVS)

ENVS 1010 Introduction to Environmental Science (3 credits)

General Education: Scientific Ways of Knowing

Introduction to basic principles in the biological, physical, and social science areas of environmental science.

ENVS 1020 Field Activities in Environmental Sciences (1 credit)

Field studies for ENVS 1010. Field demonstrations on waste management, water, air pollution, and the ecosystem. Field trips required. Typically Offered: Fall and Spring. Prereqs or

Coreqs: ENVS 1010

ENVS 2000 (s) Seminar (1-16 credits, max 99)

Credit arranged

ENVS 2010 Careers in the Environmental Sciences (3 credits)

Introduction to the wide range of interdisciplinary professions and fields of study in the environmental sciences. Includes field trips. This course is designed for ENVS majors (both traditional and transfer students) and intended to be taken during the first year at U of I. Typically Offered: Varies. Prereqs or

Coreqs: ENVS 1010 and ENVS 1020

ENVS 2250 International Environmental Issues Seminar (3 credits, max 99)

General Education: International

Cross-listed with IS 2250

Designed for individuals who have an interest in understanding environmental issues from a global perspective. The course focuses on various social and physical issues related to the environment and natural resources using human population dynamics as a backdrop. Recommended preparation: ENVS 1010. Typically Offered: Spring.

ENVS 2990 (s) Directed Study (1-16 credits, max 99)

Credit arranged

ENVS 3000 (s) Environmental Sci Seminar (1-16 credits, max 99)

Junior-standing students study advanced topics in the environmental sciences using the coursework knowledge acquired in the previous two years of study. Includes numerous guest speakers, readings, and discussion, with specific preparation for the ENVS senior experience. Typically Offered: Varies.

Prereqs: Junior standing

ENVS 3860 Managing Complex Environmental Systems (3 credits)

Cross-listed with NRS 3860

Complex environmental systems are comprised of interconnected social, economic, and environmental components. Explore complex environmental systems, frameworks and fundamental principles of sustainability in these systems by examining theory and practice in case studies. Topics may include natural resource scarcity and human conflict, ecosystem service provision, management, and conservation, and land tenure, rights, and justice relating to human access to natural resources.

ENVS 4030 (s) Workshop (1-16 credits, max 99)

Credit arranged

ENVS 4040 (s) Special Topics (1-16 credits, max 99)

Credit arranged

ENVS 4050 (s) Professional Development (1-16 credits, max 99)

Credit arranged

ENVS 4080 Energy and Environment (3 credits)

Joint-listed with ENVS 5080

This course provides an exploration of the interplay between energy production, utilization, and their environmental impacts. The course delivers an introduction to fundamental mechanical, thermochemical, chemical, and biochemical principles essential for energy conversions from various resources. This course goes beyond technology discussion, offering an interdisciplinary approach encompassing an understanding of the far-reaching environmental implications arising from energy conversion and usage. Typically Offered: Fall.

ENVS 4110 Data Wizardry in Environmental Sciences (3 credits)

Joint-listed with ENVS 5110

Data science skills are in demand across the full spectrum of careers in the environmental sciences. This course teaches programming and data science skills in the R programming language in the context of the interdisciplinary environmental sciences. Specific topics include planning for environmental data collection and analysis, basic introduction to environmental data analysis in R, environmental data exploration using graphs in R, environmental data exploration using basic statistical approaches in R, R programming, introduction to spatial data analysis in R, environmental data visualization via interactive web applications, and management of large environmental datasets in R. This course focuses on the development of practical skills and the application of skills through project-based learning. Additional work required for graduate credit. Typically Offered: Fall.

Prereqs: STAT 2510

ENVS 4150 Environmental Lifecycle Assessment (3 credits)

Joint-listed with ENVS 5150

Environmental life cycle assessment is the study of the environmental impacts resulting from the human production of goods and services from raw material acquisition through ultimate disposition. The class covers the basic concepts of life cycle assessment including definition of system boundaries, inventory of energy and material inputs and resultant emissions, assessment of impacts on human health and the environment, and interpretation of results. Recommended preparation: basic physical and biological sciences and familiarity with spreadsheet programs such as Excel. Additional assignment/projects required for graduate credit.

ENVS 4200 Introduction to Bioregional Planning (3 credits)

Cross-listed with NRS 4200

Joint-listed with ENVS 5200, LAW 5200

, NRS 5200. This class introduces students to bioregional planning concepts and shows the difference between "traditional" planning and bioregional planning and explores the relevance of "traditional" planning and bioregional planning for communities in the American West. Additional work required for graduate credit. Typically Offered: Fall.

ENVS 4230 Planning Sustainable Places (3 credits)

Joint-listed with ENVS 5230, LAW 5230

This course discusses the concept of sustainable development and its promises and pitfalls as a leading concept for the planning and design of communities. The course provides an overview of the different interpretations of sustainability and discusses the usefulness of these interpretations for planning in the context of the communities in which we live. Additional work required for graduate credit. Typically Offered: Varies.

ENVS 4280 Pollution Prevention (3 credits)

Basic concepts of pollution prevention and waste minimization; pollution prevention strategies and case studies for solid waste, hazardous waste, water and energy use, and air pollution. Typically Offered: Fall.

ENVS 4290 Environmental Audit (3 credits)

Joint-listed with ENVS 5290

Course provides details on a variety of equipment and processes used by businesses to decrease generation of solid and hazardous waste. As part of this, the ISP 14001, Environmental Management System (EMS), setup, inspections, and auditing approach are reviewed in depth. Additional projects/assignments required for graduate credit. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

ENVS 4300 Planning Theory and Process (3 credits)

Joint-listed with BIOP 5300, ENVS 5300

Seminar provides a historical and theoretical basis to address the application of knowledge to public and political decisions and the ethics of professional practice within public and non-governmental settings.

Readings, discussions, and essays focus on underlying traditions and assumptions, cultural contexts, social justice and "planner" roles. Additional work required for graduate credit. Typically Offered: Varies.

ENVS 4360 Principles of Sustainability (3 credits)

Cross-listed with FS 4360, SOIL 4360

Joint-listed with ENVS 5360, FS 5360

, SOIL 5360. Presented as online doculectures, covering topics such as origins of sustainability, standards of sustainability, culture of waste, built environment, industrial sustainability, energy sustainability, water resources, measuring sustainability, sustainable impact assessment, and our sustainable future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Typically Offered: Fall and Spring.

Prereqs: Junior standing or higher Cooperative: open to WSU degree-seeking students.

ENVS 4440 Water Quality in the Pacific Northwest (3 credits)

Cross-listed with SOIL 4440

Joint-listed with ENVS 5440, SOIL 5440

, WR 5440. Qualitative aspects of water are covered in this class. Major topics are qualitative aspects of (1) surface water, (2) groundwater, (3) drinking water, (4) water in the oceans, and (5) the human waste stream. Concepts presented are relevant to world-wide water quality issues and concepts; however, an emphasis is placed on issues within the four Pacific Northwest states (ID, AK, OR, WA). Typically Offered: Fall.

ENVS 4480 Drinking Water and Human Health (3 credits)

Cross-listed with SOIL 4480

Joint-listed with ENVS 5480, SOIL 5480

Understand the characterization, testing, and treatment of chemical, microbial and hazardous compounds and their impact on human health. Be familiar with drinking water standards, regulatory aspects and protection of municipal, community, and private well systems. Typically Offered: Spring.

ENVS 4500 Environmental Hydrology (3 credits)

Cross-listed with SOIL 4500

Comprehensive understanding of the hydrologic processes associated with the environmental processes. Includes components of the hydrologic cycle, analysis of precipitation and run off, evapotranspiration, routing, peak flow, infiltration, soil and water relationships, snowmelt, and frequency analysis. Typically Offered: Spring.

Prereqs: MATH 1143 or vertically related higher course

ENVS 4750 Local and Regional Environmental Planning (3 credits)

Cross-listed with NRS 4750

This course focuses on environmental planning by governments, nonprofit organizations, and collaborative partnerships at the local and regional level. Students will study a variety of planning approaches, such as community visioning and policy and management tools. Topics will include planning for public health, natural areas, working landscapes, and the built environment. Typically Offered: Varies.

Prereqs: Junior or Senior standing or permission.

ENVS 4760 Environmental Project Management and Decision Making (4 credits)

General Education: Capstone Experience

Cross-listed with NRS 4760

Integrated, interdisciplinary approaches to project and program management and decision making. Emphasis on environmental planning techniques, scenario development, analysis, and application of geospatial tools such as GIS and remote sensing. Direct experience and basic skills for project and program development and evaluation. Typically Offered: Spring (Even Years).

Prereqs: ENVS 4200

ENVS 4770 Law, Ethics, and the Environment (3 credits)

Cross-listed with AGECE 4770, LAW 5770

Joint-listed with ENVS 5770

Examines the laws and related ethical questions pertaining to social and community-based natural resource and agroecosystem issues. Recommended Preparation: BLAW 2650. Typically Offered: Varies.

Prereqs: Junior standing and NRS 2350 or FOR 2350

ENVS 4790 Introduction to Environmental Regulations (3 credits)

Joint-listed with ENVS 5790

Interpretation and implementation of local, state, and federal environmental rules; introduction to environmental regulatory process; topics include regulatory aspects of environmental impact assessment, water pollution control, air pollution control, solid and hazardous waste, resource recovery and reuse, toxic substances, pesticides, occupational safety and health, radiation, facility siting, environmental auditing, and liability. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

ENVS 4840 History of Energy (3 credits)

Covers the history of humanity's relationship to energy. Takes a historical approach beginning with ancient sources of energy, the discovery and exploitation of coal and the industrial revolution, the critical importance of oil and its derivatives, natural gas, nuclear and renewables. Finishes with a look to possible future energy sources.

ENVS 4850 Energy Efficiency and Conservation (3 credits)

Joint-listed with ENVS 5850

Includes aspects of science, policy, and economics of energy use and efficiency measures. Considers use trends and existing and potential efficiencies primarily on a national scale with some consideration of both global and local situations. Focuses on residential and transportation energy with some coverage of commercial and industrial energy use. Additional projects/assignments required for graduate credit. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

ENVS 4970 (s) Senior Research (2-4 credits, max 4)

General Education: Capstone Experience

Open only to majors in environmental science. Preparation of proposal, poster, formal presentation, and written thesis or report based on research or project conducted with a faculty member. Research addresses an environmental problem using laboratory, field, or library techniques.

Prereqs: Senior standing Prereqs or

Coreqs: ENGL 3160 or ENGL 3170

ENVS 4980 (s) Internship (1-16 credits, max 99)

Credit arranged

ENVS 4990 (s) Directed Study (1-16 credits, max 99)

Credit arranged

ENVS 5000 Master's Research and Thesis (1-16 credits, max 99)

Credit arranged

ENVS 5010 (s) Seminar (1-16 credits, max 99)

Credit arranged

ENVS 5020 (s) Directed Study (1-16 credits, max 99)

Credit arranged

ENVS 5030 (s) Workshop (1-16 credits, max 99)

Credit arranged

ENVS 5040 (s) Special Topics (1-16 credits, max 99)

Credit arranged

ENVS 5050 (s) Professional Development (1-16 credits, max 99)

Credit arranged

ENVS 5080 Energy and Environment (3 credits)

Joint-listed with ENVS 4080

This course provides an exploration of the interplay between energy production, utilization, and their environmental impacts. The course delivers an introduction to fundamental mechanical, thermochemical, chemical, and biochemical principles essential for energy conversions from various resources. This course goes beyond technology discussion, offering an interdisciplinary approach encompassing an understanding of the far-reaching environmental implications arising from energy conversion and usage. Typically Offered: Fall.

ENVS 5090 Principles of Environmental Toxicology (3 credits)

Cross-listed with FS 5090, SOIL 5090

Joint-listed with SOIL 4090

Fundamental toxicological concepts including dose-response relationships, absorption of toxicants, distribution and storage of toxicants, biotransformation and elimination of toxicants, target organ toxicity and teratogenesis, mutagenesis, and carcinogenesis; chemodynamics of environmental contaminants including transport, fate, and receptors; chemicals of environmental interest and how they are tested and regulated; risk assessment fundamentals. Graduate students are required to prepare an additional in-depth report. Recommended Preparation: BIOL 1020 or BIOL 1150, CHEM 1111, CHEM 1120, CHEM 2750, and STAT 2510. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

ENVS 5110 Data Wizardry in Environmental Sciences (3 credits)

Joint-listed with ENVS 4110

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ENVS 5200 Introduction to Bioregional Planning (3 credits)

Cross-listed with LAW 5200, NRS 5200

Joint-listed with ENVS 4200, NRS 4200

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ENVS 5230 Planning Sustainable Places (3 credits)

Cross-listed with LAW 5230

Joint-listed with ENVS 4230

This course discusses the concept of sustainable development and its promises and pitfalls as a leading concept for the planning and design of communities. The course provides an overview of the different interpretations of sustainability and discusses the usefulness of these interpretations for planning in the context of the communities in which we live. Additional work required for graduate credit. Typically Offered: Varies.

ENVS 5290 Environmental Audit (3 credits)

Joint-listed with ENVS 4290

Course provides details on a variety of equipment and processes used by businesses to decrease generation of solid and hazardous waste. As part of this, the ISP 14001, Environmental Management System (EMS), setup, inspections, and auditing approach are reviewed in depth. Additional projects/assignments required for graduate credit. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

ENVS 5300 Planning Theory and Process (3 credits)

Cross-listed with BIOP 5300

Joint-listed with ENVS 4300

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ENVS 5360 Principles of Sustainability (3 credits)

Cross-listed with FS 5360, SOIL 5360

Joint-listed with ENVS 4360, FS 4360

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ENVS 5440 Water Quality in the Pacific Northwest (3 credits)

Cross-listed with SOIL 5440, WR 5440

Joint-listed with ENVS 4440, SOIL 4440

Qualitative aspects of water are covered in this class. Major topics are qualitative aspects of (1) surface water, (2) groundwater, (3) drinking water, (4) water in the oceans, and (5) the human waste stream. Concepts presented are relevant to world-wide water quality issues and concepts; however, an emphasis is placed on issues within the four Pacific Northwest states (ID, AK, OR, WA). Typically Offered: Fall.

ENVS 5480 Drinking Water and Human Health (3 credits)

Cross-listed with SOIL 5480

Joint-listed with ENVS 4480, SOIL 4480

Understand the characterization, testing, and treatment of chemical, microbial and hazardous compounds and their impact on human health. Be familiar with drinking water standards, regulatory aspects and protection of municipal, community, and private well systems. Typically Offered: Spring.

ENVS 5510 Research Methods in the Environmental Social Sciences (3 credits)

Qualitative and quantitative social science data collection and analysis methods in the specific context of environmental research topics.

Methods include interviews, focus groups and surveys, qualitative coding and statistical analysis, research co-production, and using spatial data.

Typically Offered: Varies.

Prereqs: One course or experience in basic statistics or Instructor Permission

ENVS 5520 Environmental Philosophy (3 credits)

Cross-listed with PHIL 5520

Joint-listed with PHIL 4520

Philosophical examination of various ethical, metaphysical, and legal issues concerning humans, nature, and the environment; issues covered may include biodiversity and species protection, animal rights, radical ecology, environmental racism, wilderness theory, population control, and property rights. Additional projects/assignments required for graduate credit.

ENVS 5770 Law, Ethics, and the Environment (3 credits)

Cross-listed with AGECEC 5770

Joint-listed with AGECEC 4770, ENVS 4770

, LAW 5770. Examines the laws and related ethical questions pertaining to social and community-based natural resource and agroecosystem issues. Recommended Preparation: BLAW 2650. Typically Offered: Varies.

ENVS 5790 Introduction to Environmental Regulations (3 credits)

Joint-listed with ENVS 4790

Interpretation and implementation of local, state, and federal environmental rules; introduction to environmental regulatory process; topics include regulatory aspects of environmental impact assessment, water pollution control, air pollution control, solid and hazardous waste, resource recovery and reuse, toxic substances, pesticides, occupational safety and health, radiation, facility siting, environmental auditing, and liability. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

ENVS 5980 (s) Internship (1-16 credits, max 99)

Credit arranged

ENVS 5990 (s) Non-thesis Master's Research (1-16 credits, max 99)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

ENVS 6000 Doctoral Research and Dissertation (1-45 credits, max 99)

Credit arranged

ENVS 6040 (s) Special Topics (1-16 credits, max 99)

Credit arranged

Prereqs: Enrollment in a doctoral program and permission