Environmental Science (ENVS)

ENVS 101 Introduction to Environmental Science  
3 credits  
*Gen Ed: Natural and Applied Sciences*  
Introduction to basic principles in the biological, physical, and social science areas of environmental science.

ENVS 102 Field Activities in Environmental Sciences  
1 credit  
*Gen Ed: Natural and Applied Sciences*  
Field studies for ENVS 101. Field demonstrations on waste management, water, air pollution, and the ecosystem. Field trips required.  
Prereq or Coreq: ENVS 101

ENVS 200 (s) Seminar  
Credit arranged

ENVS 201 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.  
Prereq or Coreq: ENVS 101 and ENVS 102

ENVS 225 (s) International Environmental Issues Seminar  
3 credits  
*Gen Ed: International*  
Cross-listed with IS 225.  
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. ENVS 101 recommended. (Spring only)

ENVS 299 (s) Directed Study  
Credit arranged

ENVS 300 (s) Environmental Sci Seminar  
Credits arranged  
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.  
Prereq: Junior standing

ENVS 386 Managing Complex Environmental Systems  
3 credits  
Cross-listed with NRS 386.  
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 403 (s) Workshop  
Credit arranged

ENVS 404 (s) Special Topics  
Credit arranged

ENVS 405 (s) Professional Development  
Credit arranged

ENVS 409 Principles of Environmental Toxicology  
3 credits  
Cross-listed with FS 409 and SOIL 409. Joint-listed with ENVS 509, FS 509, and SOIL 509  
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 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251. Cooperative: open to WSU degree-seeking students.

ENVS 415 Environmental Lifecycle Assessment  
3 credits  
Joint-listed with ENVS 515  
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 420 Introduction to Bioregional Planning  
3 credits  
Joint-listed with ENVS 520 and BIOP 520  
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.

ENVS 423 Planning Sustainable Places  
3 credits  
Cross-listed with BIOP 423, Joint-listed with ENVS 523 and BIOP 523  
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.

ENVS 428 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. (Fall only)

ENVS 429 Environmental Audit  
3 credits  
Details on a variety of equipment and processes used by business in order to decrease generation of solid and hazardous waste. (Fall only)
ENVS 430 Planning Theory and Process 3 credits
Joint-listed with ENVS 530 and BIOP 530
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.

ENVS 436 Principles of Sustainability 3 credits
Cross-listed with FS 436, Joint-listed with ENVS 536 and FS 536
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. Cooperative: open to WSU degree-seeking students. (Fall only)
Prereq: Junior or higher standing

ENVS 444 Water Quality in the Pacific Northwest 3 credits
Cross-listed with SOIL 444, Joint-listed with ENVS 544 and SOIL 544
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).

ENVS 448 Drinking Water and Human Health 3 credits
Cross-listed with SOIL 448, Joint-listed with ENVS 548 and SOIL 548
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. (Spring, Alt/years)

ENVS 450 Environmental Hydrology 3 credits
Cross-listed with SOIL 450
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. (Spring only)
Prereq: MATH 143 or vertically related higher course

ENVS 475 Local and Regional Environmental Planning 3 credits
Cross-listed with NRS 475.
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.
Prereq: Junior or Senior standing or permission.

ENVS 476 Environmental Project Management and Decision Making 4 credits
Gen Ed: Senior Experience
Cross-listed with NRS 476
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.

ENVS 477 Law, Ethics, and the Environment 3 credits
Cross-listed with AGEC 477, Joint-listed with AGEC 577 and ENVS 577
Examines the laws and related ethical questions pertaining to social and community-based natural resource and agroecosystem issues. Recommended Preparation: BLAW 265.
Prereq for 477: Junior standing and NRS 235 or FOR 235
Prereq for 577: Graduate standing or Permission

ENVS 479 Introduction to Environmental Regulations 3 credits
Joint-listed with ENVS 579
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. (Fall only)

ENVS 482 Natural Resource Policy and Law 3 credits
Joint-listed with ENVS 582
Course offered only at the University of Idaho at Idaho Falls. Examination of U.S. natural resource policy and law including historical contexts and current policies and laws. Additional projects/assignments required for graduate credit. Recommended Preparation: an undergraduate course in political science. (Spring, alt/years)

ENVS 484 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 485 Energy Efficiency and Conservation 3 credits
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.

ENVS 497 (s) Senior Research 2-4 credits, max 4
Gen Ed: Senior 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.
Prereq: Senior standing
Prereq or Coreq: ENGL 316 or ENGL 317
ENVS 498 (s) Internship  
Credit arranged

ENVS 499 (s) Directed Study  
Credit arranged

ENVS 500 Master's Research and Thesis  
Credit arranged

ENVS 501 (s) Seminar  
Credit arranged

ENVS 502 (s) Directed Study  
Credit arranged

ENVS 503 (s) Workshop  
Credit arranged

ENVS 504 (s) Special Topics  
Credit arranged

ENVS 505 (s) Professional Development  
Credit arranged

ENVS 509 Principles of Environmental Toxicology  
3 credits  
Cross-listed with FS 509, Joint-listed with ENVS 409 and FS 409. 
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. Students registering for FS 509 are required to prepare an additional in-depth report. Recommended Preparation: BIOL 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251.

ENVS 515 Environmental Lifecycle Assessment  
3 credits  
Joint-listed with ENVS 415. 
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 520 Introduction to Bioregional Planning  
3 credits  
Cross-listed with BIOP 520 and Joint-listed with ENVS 420 
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.

ENVS 523 Planning Sustainable Places  
3 credits  
Cross-listed with BIOP 523, Joint-listed with ENVS 423 and BIOP 423 
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.

ENVS 530 Planning Theory and Process  
3 credits  
Cross-listed with BIOP 530, Joint-listed with ENVS 430 
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.

ENVS 536 Principles of Sustainability  
3 credits  
Cross-listed with FS 536, Joint-listed with ENVS 436 and FS 436 
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. Cooperative: open to WSU degree-seeking students. (Fall only) 
Prereq: Junior or higher standing

ENVS 541 Sampling and Analysis of Environmental Contaminants  
3 credits  
Covers the sampling and analysis of environmental contaminants from a statistical perspective. Includes designing sampling plans for environmental studies, statistically analyzing environmental data, and touches on more advanced techniques such as time series analysis and censored data. (Fall only) 
Prereq: STAT 251

ENVS 544 Water Quality in the Pacific Northwest  
3 credits  
Cross-listed with SOIL 544, Joint-listed with ENVS 444 and SOIL 444 
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).

ENVS 548 Drinking Water and Human Health  
3 credits  
Cross-listed with SOIL 548, Joint-listed with ENVS 448 and SOIL 448 
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. (Spring, Alt/years)
ENVS 551 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.
Prereq: One course or experience in basic statistics or Instructor Permission

ENVS 552 Environmental Philosophy
3 credits
Cross-listed with PHIL 552, Joint-listed with PHIL 452
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 577 Law, Ethics, and the Environment
3 credits
Cross-listed with AGEC 577, Joint-listed with AGEC 477 and ENVS 477
Examines the laws and related ethical questions pertaining to social and community-based natural resource and agroecosystem issues.
Recommended Preparation: BLAW 265.
Prereq for 477: Junior standing and NRS 235 or FOR 235
Prereq for 577: Graduate standing or Permission

ENVS 579 Introduction to Environmental Regulations
3 credits
Joint-listed with ENVS 479
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. (Fall only)

ENVS 582 Natural Resource Policy and Law
3 credits
Joint-listed with ENVS 482
Offered only at the University of Idaho at Idaho Falls.
Examination of U.S. natural resource policy and law including historical contexts and current policies and laws. Additional projects/assignments required for graduate credit. Recommended Preparation: an undergraduate course in political science. (Spring, alt/years)

ENVS 598 (s) Internship
Credit arranged

ENVS 599 (s) Non-thesis Master's Research
Credit arranged
Research not directly related to a thesis or dissertation.
Prereq: Permission

ENVS 600 Doctoral Research and Dissertation
Credit arranged

ENVS 604 (s) Special Topics
Credit arranged
Prereq: Enrollment in a Doctoral Program and Permission