

ENVIRONMENTAL STUDIES (ENV S)

Any experimental courses offered by ENV S can be found at:

registrar.iastate.edu/faculty-staff/courses/explistsings/ (<http://www.registrar.iastate.edu/faculty-staff/courses/explistsings/>)

Courses primarily for undergraduates:

ENV S 101: Environmental Geology: Earth in Crisis

(Cross-listed with GEOL). (3-0) Cr. 3. F.S.SS.

Exploration of the interactions between humans and the geologic environment, and the consequences of those interactions, on local to global scales. Discussion of water, soil, mineral, and energy resources, pollution, climate change, and natural hazards such as earthquakes, volcanism, mass wasting, and flooding.

ENV S 108: Introduction to Oceanography

(Cross-listed with GEOL). (3-0) Cr. 3. F.

Introduction to the study of oceans and the processes that helped shape them. A major focus is on how the oceans work, with special attention on geological, chemical, and biological processes. Ocean circulation and its influence on climate. Life of the oceans. Use and misuse of ocean resources. Anthropogenic impacts on the oceanic environment.

ENV S 111: Geological Disasters

(Cross-listed with GEOL). (1-0) Cr. 1. F.S.SS.

Introduction to the catastrophic geologic processes with the potential to devastate human populations that continue to expand into regions at greatest risk from geologic hazards. Selected case studies and discussion of plate tectonics, climate, and earth processes explain the driving forces behind natural hazards such as earthquakes, tsunamis, volcanic eruptions, landslides, and floods.

ENV S 120: Introduction to Renewable Resources

(Cross-listed with AGRON, NREM). (3-0) Cr. 3. F.S.

Overview of soil, water, plants, and animals as renewable natural resources in an ecosystem context. History and organization of resource management. Concepts of integrated resource management.

ENV S 130: Natural Resources and Agriculture

(Cross-listed with NREM). (3-0) Cr. 3. S.

Survey of the ecology and management of fish, forest, and wildlife resources in areas of intensive agriculture, with emphasis on Iowa. Conservation and management practices for private agricultural lands. Designed for nonmajors.

ENV S 140: Climate and Society

(Cross-listed with AGRON, GEOL, MTEOR). Cr. 3. F.S.

The climate system of our planet. How nature and our actions alter the existing energy balance leading to climate change. Past climates on our planet. The influence of climate on society and resource availability during the Holocene (~ 11,000 years ago to present) with focus on changes post industrial revolution. Significant climate events that have altered our way of life in the past. Projected changes in future climate and potential impacts on society, environment and resources. Adaption to and mitigation of climate change.

Meets International Perspectives Requirement.

ENV S 160: Water Resources of the World

(Cross-listed with AGRON, GEOL, MTEOR). (3-0) Cr. 3. S.

Study of the occurrence, history, development, and management of world water resources. Basic hydrologic principles including climate, surface water, groundwater, and water quality. Historical and current perspectives on water policy, use, and the role of water in society and the environment. Meets International Perspectives Requirement.

ENV S 173: Environmental Biology

(Cross-listed with BIOL). (3-0) Cr. 3. F.S.

An introduction to the structure and function of natural systems at scales from the individual to the biosphere and the complex interactions between humans and their environment. Discussions of human population growth, biodiversity, sustainability, resource use, and pollution. Does not satisfy biology major requirements.

ENV S 201: Introduction to Environmental Issues

(Cross-listed with BIOL, ENSCI). (2-0) Cr. 2. F.

Discussion of current and emerging environmental issues such as human population growth, energy use, loss of biodiversity, water resources, and climate change.

ENV S 204: Biodiversity

(Cross-listed with BIOL). (4-0) Cr. 2. S.

Prereq: One course in life sciences

Survey of the major groups of organisms and biological systems. Definition, measurements, and patterns of distribution of organisms. Sources of information about biodiversity. Does not satisfy biology major requirements. Half semester course. See list of life science courses (<https://www.cals.iastate.edu/student-services/lifescience>) for additional information.

ENV S 220: Globalization and Sustainability

(Cross-listed with ANTHR, GLOBE, M E, MAT E, SOC). (3-0) Cr. 3. F.S.

An introduction to understanding the key global issues in sustainability. Focuses on interconnected roles of energy, materials, human resources, economics, and technology in building and maintaining sustainable systems. Applications discussed will include challenges in both the developed and developing world and will examine the role of technology in a resource-constrained world. Cannot be used for technical elective credit in any engineering department.

Meets International Perspectives Requirement.

ENV S 250: Environmental Geography

(Cross-listed with AGRON, ENSCI, NREM). (3-0) Cr. 3. F.

The distribution, origins and functions of the earth's physical systems and the spatial relationship between human activity and the natural world.

ENV S 270: Foundations in Natural Resource Policy and History

(Cross-listed with L A, NREM). (3-0) Cr. 3. F.

The development of natural resource conservation philosophy and policy from the Colonial Era to the present. North American wildlife, forestry, and environmental policy; national parks and other protected lands; federal and state agencies. Relationship to cultural contexts, including urban reform and American planning movement. Discussion of common pool resources, public and private lands.

ENV S 283: Introduction to Environmental Politics and Policies

(Cross-listed with POL S). (3-0) Cr. 3. S.

Introduction to how major ideologies address conservation and ecology. Processes, participants, and institutions involved in state, national, and global environmental policymaking. Case studies of environmental controversies and proposals for policy reform.

ENV S 293: Environmental Planning

(Cross-listed with C R P). (3-0) Cr. 3. F.S.

Comprehensive overview of the field of environmental relationships and the efforts being made to organize, control, and coordinate environmental, aesthetic, and cultural characteristics of land, air, and water.

ENV S 319: Analysis of Environmental Systems

(Cross-listed with BIOL, ENSCI). Cr. 3. S.

Prereq: ENSCI 312; Junior classification

Systems approach to the analysis and modeling of material and energy flows in natural and managed environmental systems and the primary environmental factors controlling these systems. Applications in hydrology, biogeochemistry, and population dynamics.

ENV S 320: Ecofeminism

(Cross-listed with WGS). (3-0) Cr. 3.

Prereq: WGS 201 or 3 credits in WGS at the 300 level or above

Women's relationships with the earth, non-human nature, and other humans. The course explores the connections between society's treatment of women and nature; origins of ecofeminism and how it relates to the science of ecology, conventional and sustainable agriculture as well as how ecofeminism relates to other branches of feminist philosophy. Evaluation and critique of modern science, technology, political systems and SOLUTIONS will be included.

ENV S 324: Energy and the Environment

(Cross-listed with ENSCI, GEOL, MTEOR). (3-0) Cr. 3. S.

Prereq: CHEM 163 or CHEM 167 or CHEM 177

Exploration of the origin of Earth's energy resources and the environmental and climatic impacts of energy acquisition and consumption. Renewable and non-renewable energy resources within an Earth-system context. Various environmentally-relevant topics such as water quality and availability, habitat destruction, greenhouse-gas emissions, and health and safety hazards to wildlife and human communities.

ENV S 334: Environmental Ethics

(Cross-listed with PHIL). (3-0) Cr. 3. F.

Prereq: 3 credits in PHIL or Permission of Instructor

Thorough study of some of the central moral issues arising in connection with human impact on the environment, e.g., human overpopulation, species extinction, forest and wilderness management, pollution. Several world views of the proper relationship between human beings and nature will be explored.

ENV S 342: World Food Issues: Past and Present

(Cross-listed with AGRON, FS HN). (3-0) Cr. 3. F.S.SS.

Prereq: Junior classification

Issues associated with global agricultural and food systems including ethical, social, economic, environmental, and policy contexts. Investigation of various causes and consequences of overnutrition/ undernutrition, global health, poverty, hunger, access, and distribution. Meets International Perspectives Requirement.

ENV S 345: Population and Society

(Cross-listed with SOC). (3-0) Cr. 3. F.

Prereq: SOC 134

Human population growth and structure; impact on food, environment, and resources; gender issues; trends of births, deaths, and migration; projecting future population; population policies and laws; comparison of the United States with other societies throughout the world. Meets International Perspectives Requirement.

ENV S 355: Literature and the Environment

(Cross-listed with ENGL). (3-0) Cr. 3.

Prereq: ENGL 250

Focused study of texts that address a wide range of environmental issues, including the relationship between humans and natural/urban environments, views of other-than-human beings, food, climate change, extinction, and social and racial justice. Assignments for the course may include research, exams, writing, and/or individual/group projects.

ENV S 362: Global Environmental History

(Cross-listed with HIST). (3-0) Cr. 3. F.

Prereq: Sophomore classification

Survey of the interactions of human communities with their environments from the beginnings of human history to the present. Topics include the domestication of animals, the agricultural revolution, industrialization, urbanization, deforestation, hydraulic management, fossil fuel consumption, and climate change.

ENV S 363: U. S. Environmental History

(Cross-listed with HIST). (3-0) Cr. 3.

Prereq: Sophomore classification

Survey of the interactions of human communities with the North American environment. Focus on the period from presettlement to the present, with a particular concentration on natural resources, disease, settlement patterns, land use, and conservation policies.

ENV S 380: Energy, Environmental and Resource Economics

(Cross-listed with ECON). (3-0) Cr. 3.

Prereq: ECON 101

Natural resource availability, use, conservation, and government policy, with emphasis on energy issues. Environmental quality and pollution control policies.

ENV S 382: Environmental Sociology

(Cross-listed with SOC). (3-0) Cr. 3. F.S.

Prereq: 3 credits of ENV S or SOC 134

Environment-society relations; social construction of nature and the environment; social and environmental impacts of resource extraction, production, and consumption; environmental inequality; environmental mobilization and movements; U.S. and international examples. Meets International Perspectives Requirement.

ENV S 390: Internship in Environmental Studies

Cr. arr. Repeatable. F.S.SS.

Prereq: Permission of Environmental Studies Coordinator

Practical experience with nature centers, government agencies, schools, private conservation groups, and other organizations. Offered on a satisfactory-fail basis only.

ENV S 404: Global Change

(Cross-listed with AGRON, ENSCI, MTEOR). (3-0) Cr. 3. F.S.

Recent changes in global biogeochemical cycles and climate; models of future changes in the climate system; impacts of global change on agriculture, water resources and human health; ethical issues of global environmental change.

ENV S 407: Watershed Management

(Cross-listed with ENSCI, NREM). (3-3) Cr. 4. S.

Prereq: 1 course in BIOL

Managing human impacts on the hydrologic cycle. Field and watershed level best management practices for modifying the impacts on water quality, quantity and timing are discussed. Field project includes developing a management plan using landscape buffers.

ENV S 424: Sustainable and Environmental Horticulture Systems

(Cross-listed with HORT). (3-0) Cr. 3. Alt. S., offered odd-numbered years.

Inquiry into ethical issues and environmental consequences of horticultural cropping systems, production practices and managed landscapes. Emphasis on systems that are resource efficient, environmentally sound, socially acceptable, and profitable.

ENV S 450: Issues in Sustainable Agriculture

(Cross-listed with AGRON). (3-0) Cr. 3. S.

Agricultural science as a human activity; contemporary agricultural issues from agroecological perspective. Comparative analysis of intended and actual consequences of development of industrial agricultural practices.

ENV S 460: Controversies in Natural Resource Management

(Cross-listed with NREM). (3-0) Cr. 3. F.S.

Prereq: (A ECL 312 or NREM 301); NREM 120; Junior classification

Analysis of controversial natural resource issues using a case approach that considers uncertainty and adequacy of information and scientific understanding. Ecological, social, political, economic, and ethical implications of issues will be analyzed.

ENV S 484: Sustainable Communities

(Cross-listed with C R P). (3-0) Cr. 3. S.

Prereq: Junior classification

The history and theory of sustainable community planning. Procedural and substantive dimensions. Case studies of communities engaged in sustainability planning. Use and development of indicators.

ENV S 490: Independent Study

Cr. arr. Repeatable. F.S.SS.

Prereq: Permission of Instructor; Permission of Environmental Studies Coordinator

ENV S 490H: Independent Study: Honors

Cr. arr. Repeatable. F.S.SS.

Prereq: Permission of Instructor; Permission of Environmental Studies Coordinator

ENV S 491: Environmental Law and Planning

(Cross-listed with C R P, L A). (3-0) Cr. 3. S.

Prereq: 6 credits in natural sciences or Permission of Instructor

Environmental law and policy as applied in planning at the local and state levels. Brownfields, environmental justice, water quality, air quality, wetland and floodplain management, and local government involvement in ecological protection through land use planning and other programs.

ENV S 496: Travel Course

Cr. arr. Repeatable.

Prereq: Permission of Instructor

Extended field trips to study environmental topics in varied locations. Location and duration of trips will vary. Trip expenses paid by students. Check with department for current offerings.

ENV S 496A: International Tour

Cr. arr. Repeatable.

Prereq: Permission of Instructor

Extended field trips to study environmental topics in varied locations. Location and duration of trips will vary. Trip expenses paid by students. Check with department for current offerings.

ENV S 496B: Domestic Tour

Cr. arr. Repeatable.

Prereq: Permission of Instructor

Extended field trips to study environmental topics in varied locations. Location and duration of trips will vary. Trip expenses paid by students. Check with department for current offerings.