

Planet OHIO
 UNDERGRADUATE COURSES
 ON ENVIRONMENT AND
 SUSTAINABILITY
 2008-2009*, Athens
 Campus
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Spring Courses

Department	Course #	Credits	Quarter	Course Title	Description
Anthropology	378	4	Spring	Human Ecology	Analysis of mutual and reciprocal relations between sociocultural systems and other systems in their environment; ecosystems and biotic communities in which human populations are included.
Anthropology	494D	4	Winter	Seminar: Human Ecology	Advanced course dealing with topics of current research interest in human ecology. Topic varies according to individual course.
Biological Sciences	220	4	Spring	Conservation and Biodiversity	For nonmajors. Introduces the student to the modern field of conservation biology and the role of genetics, ecology, life history, and biogeography in the preservation and maintenance of biodiversity. Case studies of endangered animal and plant species will be highlighted. Credit not allowed for both BIOS 220 and 481. 4 lec.
Biological Sciences	275	4	Fall	Ecology in the 21st Century	Introductory study of the natural environment and relations of organisms to one another and their surroundings. Individual, population, and community and global dynamics are considered in natural and human-influenced environments to improve ecological literacy about how the natural world works. Credit not allowed for both 275 and 375. 4 lec.
Biological Sciences	316	4	Fall	Biogeography	An examination of historical, environmental, and biotic influences that shape spatial patterns of plant and animal distributions and community structure in the contemporary landscape.
Biological Sciences	376	4	Spring	Field Ecology	Quantitative analysis of field problems in ecology; consisting of design of field experiments and hypothesis testing, graphic and statistical analysis of data; interpretation of results and report writing. 1 lec, 6 lab.
Biological Sciences	429	5	Spring	Marine Biology	Biological processes in marine and estuarine habitats, and adaptations for life at sea; emphasis on environmental variables affecting distribution, abundance, and dynamics of marine plants and animals. Includes optional 4-day field trip to marine environment. 5 lec, field trip.
Biological Sciences	431	5	Fall	Aquatic Biology	Physical, chemical, and biological processes in lakes and running waters. Emphasis on the collection and analysis of environmental and ecological data describing populations and communities. Lab includes field sampling of local habitats.
Biological Sciences	471	6	Fall	Ornithology	Bird biology, including discussions on anatomy, physiology, conservation biology, life histories, and role or ornithology in current ecological and evolutionary theory.

Biological Sciences	481	4	Spring	Animal Conservation Biology	The roles of population genetics, population and community ecology, biogeography, systematics, and paleobiology in the study of biodiversity, design of nature reserves, and the recovery of endangered species. Discussion of extinction as a process, the effects of human-induced habitat degradation on loss of species diversity, and the role of reserves in protection of species.
Biological Sciences	491	2 to 6	Fall	Biological Internship	Practice applying biological methods in professional settings such as biomedical labs, zoos, wildlife refuges and parks, environmental monitoring labs, marine and seaworld institutes, etc.
Business Administration	325	4		Social Responsibility of Business	Considers the role of the business in modern society. A wide range of social and legal issues will be addressed during class discussions and assignments, including: environmental impact, discrimination, consumerism, workplace safety, worker rights, and the impact of globalization. Students are expected to research and write about issues from various sides, analyzing ethical dilemmas and the relative merits of possible solutions.
Business Administration	470	4	Fall	Ethics and Morality in Business	Enables students to view organizations as integrated systems and apply key concepts from other business disciplines to complex business situations. Students will apply a holistic perspective of business and the global environment in which business operates, analyze complex, dynamic business situations and identify critical business issues that must be addressed, analyze an industry and forecast likely events in an industry's future, analyze a firm and identify its important competencies and weaknesses, and identify acceptable alternative strategies for a firm in its pursuit of competitive advantage.
Business Law	255	4	Spring	Law and Society	Conceptual approach to origin, nature, structure, functions, and procedures of law, with study of ethics and introduction to constitutional, administrative, criminal, tort, contractual, international, and environmental law, as well as business organizations.
Civil Engineering	343	3	Spring	Hydrology	Hydrologic cycle. Precipitation and runoff data; groundwater hydraulics; infiltration; peak runoff calculations. Application to water resource problems.
Civil Engineering	353	3	Spring	Environmental Engineering Basics	Engineering concepts, theory, design, and practice as applied to solution of problems of environmental technologies, waste management, drainage, and control of water, soil, and atmospheric pollution; social and environmental impact of these solutions. 3 lec.
Civil Engineering	370	4	Winter	Geotechnical Engineering	Soil compositions, physical and chemical properties, and classifications; water movement and seepage problems; consolidation and shear strength; applications to earth structures, retaining walls, slope stability, bearing capacity, and settlement. May be taken as 570 for grad credit except by civil engineers. 4 lec.
Civil Engineering	371	1	Winter	Soil Engineering Laboratory	Classification of soils and determination of their properties through tests; grain size analysis, Atterberg limits, relative density, Proctor testing, permeability, direct shear, and consolidation.

Civil Engineering	450	3	Fall	Water Treatment	Sources and collection of public water supplies; principles of treatment processes.
Civil Engineering	451	3	Winter	Wastewater Treatment	Quantities and collection of municipal wastewater; principles of treatment processes.
Civil Engineering	453	3	Fall	Solid and Hazardous Waste Treatment and Disposal	Identification, classification, and study of methods of characterization, handling, treating, managing, and disposal of solid/hazardous wastes regulated under federal and state guidelines and legislation.
Civil Engineering	454	3	Winter	Green Engineering	Identification, classification, and study of methods of characterization, handling, treating, managing, and disposal of solid/hazardous wastes regulated under federal and state guidelines and legislation.
Civil Engineering	476	4	Fall	Soil Stabilization	Engineering, geological, and pedological soil classification systems. Mineralogy of clay minerals and claywater systems; requirements for and factors affecting soil stability. Methods and mechanics of soil stabilization; designing and testing stabilized soils.
Civil Engineering	491A	4	Fall	Senior Design - Land Development	An advanced applied engineering course utilizing multiple fundamental civil engineering courses as applied to land development.
Civil Engineering	491B	4	Winter	Senior Design - Environmental/Water Resources	An advanced applied engineering course utilizing combinations of water/wastewater treatment and hydraulics/hydrology courses as applied to society's needs
Chemical Engineering	463	3		Atmospheric Chemistry	Homogeneous chemistry of the lower and middle atmosphere, emphasizing processes by which human activity influences the environment.
Chemical Engineering	492D	1 to 3	Spring	Spec Inv- Engineering and Environment	Individual or small group work under faculty guidance in research or advanced study related to energy and/or environmental topics in Chemical engineering. (Only three hours of Ch E 492, 492A, 492B, 492C or 492D may be counted towards the Ch E technical elective requirement.)
Economics	312	4		Economics of Poverty	Incidence, causes, and consequence of poverty in affluent societies. Economic theory, history, statistics applied to analysis of poverty-reduction measures.
Economics	313	4	Winter	Economics of Environment	Economic analysis of such environmental matters as air, water, and noise pollution, population growth, and land use. Emphasis placed on use of economic theory and empirical research in evaluating environmental policies.
Economics	314	4	Spring	Natural Resource Economics	Explores the economic aspects involved in the extraction and utilization of both renewable and nonrenewable natural resources. Topics include the economics of oil and mineral extraction, groundwater use, agricultural practices, forestry, and fisheries. Allocation of property rights and economic benefits and costs of natural resource use also are examined.
Economics	335	4	Spring	Economics of Energy	Applies economic theory to analyzing public policy issues regarding energy production and use—including such topics as price controls, import dependency, conservation, supply outlook, and industry concentration.
Environmental Health	260	4	Spring	Intro to Environmental Health	no description provided
Environmental Health	275	4	full Summer	Environmental and Health Safety Regulations	no description provided

Environmental Health	310	3	Winter	Water Supply	Examination of processes for the development of water resources, quantity and quality requirements, preventive control measures and treatment, collection of wastewaters, and treatment for disposal or reuse. Health implications of water quality management stressed. 3 lec, 2 lab.
Environmental Risk Communication	312	4	Spring	Environmental Risk Communication	Hands on application of principles in communicating environmental health and safety risks to the public. Students will work with current environmental health and safety issues to develop and implement risk communication plans. 4 lec.
Environmental Health	464	1 to 15	Spring	Environmental Health Practicum	no description provided
Environmental & Plant Biology	100	4	Winter	World of Plants	
Environmental & Plant Biology	103	4	Spring	Plants and People	Interrelationships of plants and humans from both historical and modern points of view, origins of agriculture and civilization, tropical and temperate food plants, medicinal plants, drug plants, destruction of environment, and its ultimate effect on food plants.
Environmental & Plant Biology	109	4	Spring	American Forests	The course provides an understanding of modern forests encompassing both recent and long-term effects arising from natural and human causes. The pattern and character of forest utilization will be interpreted in terms of varied cultural experiences in different regions and times.
Environmental & Plant Biology	248	4	Fall	Trees and Shrubs	Identification, nomenclature, classification, ecological relationships, and importance to humans of native and introduced woody plants.
Environmental & Plant Biology	269C	4	Winter	Tropical Biology and Environmental Issues	no description provided
Environmental & Plant Biology	322	4	Fall	Tropical Plant Ecology	Tropical rain forest studies around the world, including basic plant ecology, conservation, and management.
Restoration Ecology	369A	3	Winter	Restoration Ecology	no description provided
Environmental & Plant Biology	412	5	Fall	Plant Pathology	Diseases of plants; history, types of pathogens and disease cycles, impact in nature and agriculture, disease control strategies. Isolation and identification of pathogens.
Environmental & Plant Biology	436	5	Fall	Plant Community Ecology	Advanced concepts and theory of plant community ecology. Emphasis will be placed on the interplay between theory and empirical studies. Classic literature will be reviewed and case studies developed from the modern literature to explore current ideas of theory, approach, and experimentation. Laboratories will emphasize modern field methods of vegetation analysis and environmental assessment.
Environmental & Plant Biology	437	4		Ecosystem Ecology	Analysis of the composition, function, and heterogeneity of ecosystems. Topics include: atmospheric, climate and geological controls on ecosystem function, comparisons of aquatic and terrestrial ecosystems, ecosystem production, nutrient cycling and trophic dynamics. Synthesis with evaluation of human impacts on ecosystems, locally and globally. 4 lec.
Environmental Engineering Technology	100			Introduction to Environmental Engineering Technology	Topics include toxicology, air pollution, groundwater contamination, transportation of hazardous materials, waste characterization, waste management, and waste treatment and disposal, with discussion of how regulations affect each.

Geography	101	5	Spring	Physical Geography	Systematic survey of temperature, precipitation, atmospheric and oceanic circulation, and global systems of climate, soils, natural vegetation, and landforms. 4 lec
Geography	121	4	Spring	Human Geography	Examination of spatial dimensions of culture, emphasizing patterns of selected cultural elements--language, religion, population, settlement, political and economic landscapes, and human/environment interactions.
Geography	201	4	Winter	Environmental Geography	Geographic survey of environmental changes caused by human activities. Focus on resource availability and use, pollution of air, water, and biosphere, energy problems, interactions of humans with plant and animal communities
Geography	241	4	Spring	Global Issues in Environmental Geography	An inquiry approach to environmental issues of global scope, such as human population growth, energy production and consumption, climatic change, deforestation, species depletion, disposal of wastes. Examination of the sustainability of human and natural systems.
Geography	316	4	Fall		An examination of the historical, environmental, and biotic influences that shape spatial patterns of plant and animal distributions and community structure in the contemporary landscape.
Geography	333	4	Spring	Appalachia	Topical and regional survey of Appalachia with emphasis on settlement and expansion, land ownership and speculation, society and culture, and the impacts of natural resource extraction.
Geography	344	4	Spring	Agricultural Ecosystems	Agricultural activity. Systematic analysis of agricultural change and sustainability of agricultural systems in the industrial and developing world. A spatial perspective on the globalization of agriculture, agrobiotechnology, and the future of agriculture.
Geography	348	4	Winter	Gender, Environment and Development	Explores frameworks linking gender and the environment and examines how they have influenced the practice of development in various geographic contexts. Case studies from Africa, USA, Latin America, and Asia. Topics include gendered access to resources, health and inequality, men and masculinities, the body and the environment, nongovernmental organizations, and grass root organizing.
Geography	350	4	Winter	Land Use Planning	Survey of land use issues including mapping, ownership, legal issues, zoning, conservation design in zoning, subdivision regulations, "takings," and habitat-conservation planning. Many practical applications are included in the class.
Geography	353	4	Fall	Environmental Planning	An introduction to the development, implementation, and operation of activities to guide landscape development. Emphasis on interaction between natural and social systems, methods of environmental analysis, and the evolution of environmental planning strategies.
Geography	357	4	Winter	Environmental Law	Legal aspects of both individual environmental and societal environmental rights and duties with respect to constitution, private property, nuisance, negligence, statutes, regulatory agencies, and court decisions. Emphasis on case study of federal, state, and local laws that shaped existing law and those that are likely to shape future legislative and administrative action.

Geography	440	4	Spring	Environmental Impact Analysis	Introduction to analytic techniques, legal responsibilities, and administrative procedures in evaluating environmental impacts of land use change. Practice in production of environmental impact statements and in documenting scientific research
Geography	447	4	Winter	Natural Resources Conservation	Themes in American environmental history, resource conservation and management, and contemporary environmentalism.
Geography	456	4	Winter	City and the Environment	Examination of historical and present-day environmental impacts of urban and suburban expansion in a North American context
Geology	101	5	Spring	Introduction to Geology	Nature and distribution of earth materials and their utilization as natural resources; discussion of earth structure, earthquakes, mountain building, and continental drift; development of landscapes. 4 lec, 2 lab. No credit if GEOL 283.
Geology	130	4	Spring	Geology of the National Parks	Survey of the geologic features of the national parks of the United States, emphasizing the history of their geologic development.
Geology	215	4	Spring	Environmental Geology	Survey of geological aspects of environmental crisis. Focus on major environmental processes, immediate and extended influence of humans, and prospects for future of physical environment. Presupposes no background in sciences.
Geology	231	4	Spring	Water and Pollution	The interrelationship between geologic and hydrologic principles and technology as they relate to the use of water resources and the environmental problems associated with its pollution.
Geology	427	4	Fall	Water Geochemistry	Geochemical origin of major ions in natural waters and the role of fluid-mineral interactions in the evolution of sediments, the ocean, and the atmosphere. Major geochemical cycles. Introduction to thermodynamic equilibrium, kinetics, complexation, oxidation-reduction, and cation exchange. Case studies of important geochemical and environmental issues
Geology	439	4	Fall	Fluvial Geomorphology	Study of stream processes and human interactions with rivers, including the qualitative and quantitative techniques used to study natural and disturbed streams as presented in lecture and field settings.
Geology	471	4	Winter	Advanced Environmental Geology	Covers the conceptual basis for understanding transport and reaction processes that govern change in many environmental systems. Emphasizes processes occurring at the three major environmental interfaces: air and water, water and the adjoining earthen material, and air and soil. Includes chemical and thermal equilibrium, chemical transport, and transport and transfer of energy across the interfaces. 4 lec.
Health Sciences- Environmental Health	260	4	Spring	Introduction to Environmental Health	Survey of technical and administrative procedures needed to control the environment, especially as they relate to health effects encountered in daily activities. Emphasis on general ecological environmental protection and environmental degradation, along with safety concepts, practices, and procedures.
Health Sciences- Environmental Health	275	4	Fall	Environmental and Occupational Safety Regulations.	Overview of the history, development, and current application of major regulations, amendments, and reauthorizations related to the environmental and occupational health and safety regulatory process.
Health Sciences- Environmental Health	312	4	Spring	Hazardous Waste	Problems in and solutions to the storage, collection, and disposal of hazardous and nonhazardous wastes with special emphasis on life cycle analysis and risk assessment.

Health Sciences- Environmental Health	435	2	Spring	Environmental Health Lab	Hands-on activities and exercises in environmental health practices. Topics include food safety air pollution, water quality, vectors and waste management. Designed for students who will pursue careers in environmental health and safety. 6 lab.
Health Sciences- Environmental Health	440	3	Fall	Air Quality Control	Evaluating and monitoring air quality; effects of pollution control and lab procedures in air quality investigation. Special emphasis on air pollution's effects on human health and welfare
History	306	4	Winter	American Environmental History	A survey of the evolution--from 1565 to the present--of American attitudes toward and interactions with the natural world, including such topics as romanticism, the "code of the sportsman," conservation, the "land ethic," and "deep ecology."
History	333	4	Winter	Oil and World Power	Examines the international politics of oil from a historical perspective, emphasizing the importance of the Persian Gulf. Topics include: the roots and guiding principles behind oil policy; oil in the two world wars; postwar changes in global oil production, culminating in the oil crisis of the 1970s; the pattern and end of the British dominance in the Gulf; the subsequent expansion of U.S. commitments in the region since the 1970s; the role of local nation-states, in particular Iran, Iraq, and Saudi Arabia; oil today and prospects for the future.
Human and Consumer Services	202	4	Spring	Environmental Design II	Investigation of basic environment design process, ideation, communication, and application and evaluation of materials. Students must maintain a computer workstation in the design studio for this course. 8 lab.
Industrial Health	420	4	Spring	Hazardous Material Management and Control	Lectures on gases, vapors, dusts, liquids, and solids and their physical and chemical properties. Emphasis is upon evaluation and control methods. Student is required to develop controls for specific cases and present them in technical reports. 4 lec.
Mechanical Engineering	100	4	Spring	Intro to Mechanical Engineering (Tier I for non-majors)	Open to students of all majors. Introduction to the history, professional values, and methods of mechanical engineering. Lab work provides hands-on experience with engineering systems and introduces engineering design, graphical, and computer techniques of problem solving. Discussion of current areas of interest for engineering research and future prospects for technology. No specific mathematics background required.
Mechanical Engineering	412	4	Spring	Heat Transfer (majors only)	Basic concepts of conduction in 1 or more dimensions, steady and transient modes. Radiation, fundamentals of convection in various modes, heat exchanger design. 4 lec.
Mechanical Engineering	423		Winter	Fuel Cell Design	Design of fuel cells using analytical tools, based on thermodynamic and electrochemistry.
Mechanical Engineering	435	3	Winter	Energy Engineering and Management	Basic concepts and objectives of energy management, energy audit, engineering evaluation of several energy systems, availability analysis, second law efficiency, economic evaluation, and application of these principles to case studies.
Philosophy (PHIL)	335	4	Winter	Environmental Ethics	How should we value nature? What is important about it, and why? Is it important to us because caring for nature advances our interests, or because it is valuable in its own right? Do animals have special claims upon us? Should our primary concern be for individual organisms, or for species? This course will aim at thinking through some of the questions that surround the idea of valuing the environment in which we live, and understanding possible views as to the source and nature of that value.

Philosophy (PHIL)	491	1 to 15	Winter	Climate Change: SCI, Ethic	no description provided
Political Science (POLS)	150	4	Spring	Current World Problems	Examines a number of the major political crises, problems, and issues confronting the contemporary world. (Check with instructor to see if they intend to include issues like climate change, waterscarcity, etc)
Political Science (POLS)	425	4	Fall	Environmental and Natural Resource Politics and Policy	Examines the institutional context and political dynamics of environmental and natural resource policy making in the United States. Topics include history of the U.S. environmental movement, major players and arenas of influence in environmental politics, and current policy issues including public lands, endangered species, solid and hazardous waste, and air pollution
Political Science (POLS)	426	4	Spring	Politics of Contemporary Environmental Movement	Examines the major segments of contemporary U.S. environmental movement. Topics include the professionalization, activities, strategies, and criticisms of the mainstream environmental groups; radical environmentalism; grassroots environmentalism and gender; environmental justice and race.
Political Science (POLS)	490W	4	Spring	International and Environmental Politics	no description provided
Sociology	201	4	Spring	Contemporary Social Problems	Sociological perspectives on social problems considered. Specific social problems analyzed may include problems related to crime, sexual inequality, poverty, minority groups, drug and alcohol abuse, mental illness, environment, and others. (check with professor for specific focus)
Tier III	402B	4	Spring	Introduction to Alternative Agriculture	Approaches agriculture through three disciplines: history, health, and environmental and plant biology, particularly as latter relates to growth of plants in soil. Historical development of current agricultural problems is examined, and practical, biologically based solutions are proposed. The relationship between soil infertility and the health and disease of animals and humans is also examined. Problems relating to Third World cultures are emphasized.
Tier III	408	4	Winter	Environmentalism in America	Topical survey of schools of thought, themes, and specific issues in American conservation in past century, with 19th-century transcendental thinkers are base line. Contemporary environmental issues and debates provide capstone for course.