

Course Number	Department	Course Title	Level	Sustainability Content	Catalog Description
AMS 397	American Studies	American Environmental History	Undergraduate	Focused	Introduction to human-natural environmental relationships in English North America and the United States, ca. 1600 to present. Chronological and regional approach with emphasis upon political economy and the American conservationist/environmentalist movement.
ATH 471	Anthropology	Ecological Anthropology	Undergraduate	Focused	Survey of ecological methods and models used by anthropologists in the analysis of cultural-environmental relations and in conservation planning.
ARC 212	Architecture and Interior Design	Principles of Environmental Systems	Undergraduate	Focused	Understanding of the basic principles that inform the design of environmental and structural systems and their integration into building design.
ARC 406	Architecture and Interior Design	Seminars	Undergraduate	Focused	Courses in three of the primary curricular areas: communication process; history and theory; environmental systems/practice. Offerings vary. May include: housing, contemporary architecture theory and practice, vernacular architecture, urban studies, architectural theory, exploration of graphic media, advanced work in building systems, etc. Seminar descriptions available at departmental office during preregistration each semester. Nonmajors encouraged to seek course work in their area of interest.
ARC 413	Architecture and Interior Design	Environmental Systems I	Undergraduate	Focused	Understanding of the basic principles that inform the design of environmental systems, with an emphasis on the building envelope and energy-efficient systems, heat gain and loss, alternative energy systems, the design and integration of climate control systems (heating, ventilating, air-conditioning), and plumbing and fire prevention systems.
ARC 414	Architecture and Interior Design	Environmental Systems II	Undergraduate	Focused	Understanding of the basic principles that inform the design of environmental systems, with an emphasis on lighting and power/ data systems. Course topics include acoustics, life-safety systems, and building service systems.
BIO 121	Biology	Environmental Biology	Undergraduate	Focused	Local, regional, and global environmental issues examined in the context of current ecological theory and principles of resource use and management.
BIO 131	Biology	Plants, Humanity, and Environment	Undergraduate	Focused	Introduction to fundamental concepts in plant biology, ecology, and scientific perspective as they relate to issues of social concern.
BIO 176	Biology	Ecology of North America	Undergraduate	Focused	Basic principles of ecology, major biomes of North America, and pertinent environmental issues. Biomes range from tundra to tropical rain forest. Environmental issues include biodiversity, deforestation, desertification, and other land management problems, each analyzed from a scientific perspective but involving social, economic, and humanistic factors as well.
BIO 209	Biology	Fundamentals of Ecology	Undergraduate	Focused	Interrelationships between organisms and their environments.
BIO 209W	Biology	Fundamentals of Ecology	Undergraduate	Focused	Interrelationships between organisms and their environments. This course covers the same content as BIO 209, but emphasizes scientific writing for a general audience.
BIO 255	Biology	Introduction to Biotechnology	Undergraduate	Focused	Examination of modern biotechnology and issues emerging from this technology. Emphasis on plant biotechnology and practical application of plants or their components in industry, agriculture, medicine, and the environment. Basic principles of molecular biology and recombinant DNA technology introduced.
BIO 333	Biology	Field Ecology	Undergraduate	Focused	Experience in collection, analysis, and interpretation of ecological data.
BIO 351	Biology	Environmental Education: Focus on Natural History	Undergraduate	Focused	Introduction to the field of environmental education emphasizing the natural history and interpretation of natural habitats of southwestern Ohio.
BIO 431	Biology	Global Plant Diversity	Undergraduate	Focused	Research-focused seminar on floristic, ecological, and cultural influences on global patterns of plant diversity, especially in tropical regions. Comparative topics include the role of disturbances and global environmental change.
BIO 437	Biology	Paleontology in Conservation	Undergraduate	Focused	This course explores the needs of conservation scientists, what paleontological data contribute, and new methods for synthesizing modern and paleontological data to develop effective strategies for conservation, remediation, restoration, and policy.
BIO/GEO 432	Biology/Geography	Ecoregions of North America	Undergraduate	Focused	Ecological study of vegetation that applies an understanding of climate, soils, and physiography across the continent toward interpreting major vegetation types and local patterns of diversity. Discussions and field work focus on current research and conservation issues.
BIO 438	Biology	Soil Ecology and Sustainable Use	Undergraduate	Focused	Introduces processes of soil formation and consequent physical, chemical, and biological properties. Analyzes soil functions related to plant growth, agricultural productivity, water quality, and biodiversity, and evaluates sustainability of the soil resource in the context of environmental change and ecosystem management.
BIO 451	Biology	Conservation Education and Community Engagement	Undergraduate	Focused	Theory and practice of participatory education, collaborative research, and conservation action for positive ecological, educational, and social change. Includes community engagement projects and case studies in diverse local and global contexts.
BIO 467	Biology	Conservation Biology	Undergraduate	Focused	Principles of ecology and organismal biology applicable to conservation of uncommon plant and animal populations or ecosystems as related to anthropogenic influences and relevant legislation
BIO 496	Biology	Biodiversity of Kenya	Undergraduate	Focused	Intensive field-workshop on: 1) the ecology of tropical ecosystems in Kenya; 2) indigenous human relationships with Kenyan environments; and 3) conservation issues from interdisciplinary perspectives. Includes pre-trip seminars that introduce basic concepts in Kenya's ecology, a two-week intensive field experience in Kenya, and follow-up discussions and project presentations.
BUS 494	Business Analysis	Sustainability Perspectives in Resources and Business	Undergraduate	Focused	Provides students with interdisciplinary perspectives of sustainability in business and resource management through consideration of the economic, social, and environmental value of organizations. The course covers principles, case studies, and best practices used by organizations in several areas of sustainability, such as energy efficiency and alternatives, waste management and recycling, ecosystem services, product redesign and life cycle management, resource management, and sustainability planning and reporting.
CHM 491	Chemistry and Biochemistry	Chemistry in Societal Issues	Undergraduate	Focused	Chemistry is involved in many of the societal issues facing this nation. In order to protect the environment, create new energy sources, improve health, and increase consumer product safety, understanding chemistry is critical to the problem-solving process. It is important for students in technical fields to understand the interface between the known chemistry and government regulations, public perception, and legal interpretations. Students critically evaluate and form positions on current issues of national interest.
CPB 244	Chemical, Paper, and Biomedical Engineering	Introduction to Environmental Engineering	Undergraduate	Focused	Introductory design concepts for the control of water pollution, air pollution, and solid waste will be covered. Environmental legislation will be discussed. Solutions to environmental problems will be investigated, considering technical, economical and ethical aspects of engineering.
CPB 405	Chemical, Paper, and Biomedical Engineering	Industrial Environmental Control	Undergraduate	Focused	Survey of environmental issues facing the industry and how the industry addresses these issues. In-plant pollution abatement alternatives discussed as well as external treatment. Computer-based modeling applications introduced and applied to problems. Design considerations involved in selecting among alternative pollution control strategies are presented and applied to examples.

CPB 441	Chemical, Paper, and Biomedical Engineering	Pollution Prevention in Environmental Management	Undergraduate	Focused	Provides understanding of how corporations respond to governmental regulation by setting up environmental management systems which employ the principles of pollution prevention. Engineering concepts such as material balances, energy balances, risk assessment, and life cycle assessment have impacted new process designs. In this course a basis for evolution and maturation of pollution prevention as a fundamental methodology to ensure compliance and economic sustainability of industrial processes will be provided. The understanding of the concepts of pollution will be demonstrated by participation in a class project sponsored by industry at one of their facilities.
CPB 442	chemical, Paper, and Biomedical Engineering	Air Pollution Control	Undergraduate	Focused	This course will introduce students to the formation and control of air pollutants, engineering theories and principles pertaining to the design of air pollution control operations, and environmental legislation. Solutions to environmental problems will be investigated, considering technical, economical and ethical aspects of engineering.
ECO 406	Economics	Environmental Economics	Undergraduate	Focused	Economic analysis of environmental quality. Strategies for collective environmental action. Benefit-cost analysis. Economic growth and environmental quality.
ECE 291	Electrical and Computer Engineering	Energy Systems Engineering	Undergraduate	Focused	This course studies power producing systems using fossil and renewable energy sources. The components and operations of power producing systems such as hydro, thermal power plant, nuclear reactor, solar panel, wind turbine, and bioreactor are investigated. Economic decisions and societal and environmental consequences of using various energy sources are emphasized
IES 175	Institute for the Environment and Sustainability	First Year Seminar on the Environment and Sustainability	Undergraduate	Focused	Introduces students to interdisciplinary approaches in environmental science and the sustainability of natural and human systems. '
IES 211	Institute for the Environment and Sustainability	Energy and Policy	Undergraduate	Focused	Study of the relationships between energy technology and energy policy, with considerations of how policy and economic incentives influence the production and use of fossil fuels and renewable energy sources. Emphasis is on the regional and global impacts of different energy sources to natural resources and environmental quality.
IES 274	institute for the Environment and Sustainability	Introduction to Environment and Sustainability	Undergraduate	Focused	Introduction to environmental and sustainability principles from social science and natural science perspectives. Critical analysis of environment and sustainability-related problems and resolution strategies. Review of foundational concepts and case studies, which may include environmental history, biotic and natural resources, energy and climate, planning and design, organizational management and policy, and sustainable development.
IES 275	institute for the Environment and Sustainability	Principles of Environmental Science	Undergraduate	Focused	Topics include causes and consequences of climate change; contamination of earth systems and pollution mitigation; use, abuse, and conservation of natural resources; agroecosystems, land use, conservation and preservation, planning and management and the value of biodiversity and wilderness. Emphasis is on the multidisciplinary nature of environmental problems and their solutions.
IES 278	institute for the Environment and Sustainability	Introduction to Food Systems and Food Studies	Undergraduate	Focused	Introduces students to food from an interdisciplinary perspective building on the concepts underlying food systems and food studies. Course materials focus on food from a systems-based perspective, examining the origins, implications, and practices of our current food system, and exploring new approaches to sustainable agriculture and resilient food systems.
IES 411	institute for the Environment and Sustainability	Environmental Protocols	Undergraduate	Focused	Lecture/field laboratory course will integrate the collection, analysis, management, evaluation and presentation of environmental measurements. One lab and two lectures per week. Appropriate for all environmental practitioners.
IES 412	institute for the Environment and Sustainability	Tropical Ecosystems of Costa Rica	Undergraduate	Focused	Introduces students to the structure and function of neotropical ecosystems, as well as to geological, biological, cultural, and economic forces affecting biodiversity in the tropics. This course is taught onsite in Costa Rica.
IES 419	institute for the Environment and Sustainability	Environment, Society, and Justice	Undergraduate	Focused	Interdisciplinary studies of the underlying social aspects of environmental problems and issues. Topics include the unequal distribution of hazardous waste sites, the environmental impacts of war, vulnerability to disaster, the social construction of the environment, population growth, environmental movements, the political economy of the environment, and ecological modernization.
IES 423	institute for the Environment and Sustainability	Tropical Marine Ecology	Undergraduate	Focused	Investigates aquatic systems (estuaries, mangroves, coral reefs, seagrass beds, lagoons, beaches, intertidal zones, taxonomy of vertebrates and invertebrates of coral reefs, lagoons and tidal flats) paleobiology and global climate change (paleo-reconstruction of past lagoon environments, fossil coral reefs, and land use). Student research questions concerning biological and physical analyses of a select marine habitat are required. The course is taught on-site in the Florida Keys and the Bahamas.
IES 429	institute for the Environment and Sustainability	Environmental Communication	Undergraduate	Focused	Examines theories, principles, and methods for communicating environmental concepts and scientific information verbally, textually and visually to a range of audiences and stakeholders. Students will work with scientists, peer communities, clients, and focus groups to develop effective and appropriate environmental communications across mediums. Projects may include producing scientific posters, writing reviews of research projects on an environmental problem, preparing oral presentations, creating visual story of scientific work, interviewing scientists for a general news story, writing environmental proposals, and facilitating focus groups.
IES 431	institute for the Environment and Sustainability	Principles and Applications of Environmental Science	Undergraduate	Focused	Analysis of the relationship of human beings to the environment, specifically assessment of their impact on the environment as a whole. Attempts to outline the evolution and present status of many environmental problems, presents possible solutions, and attempts to predict our future relationship with nature.
IES 439	institute for the Environment and Sustainability	Stream Assessment Protocols for Habitat and Water Quality	Undergraduate	Focused	An introduction to principles and methods for assessment of surface water quality and habitat. The course prepares students with practical skills needed to attain Qualified Data Collector (QDC) status with the Ohio Environmental Protection Agency using Qualitative Habitat Evaluation Index (QHEI) and chemical water quality to assess the condition of streams. Lecture and field activities will help students attain Level 1 QDC status for chemical water quality analysis and Level 2 QDC status for QHEI. Independent assessments of streams, individual work on study plans, and application to the state is required for OEPA certification.
IES 440	institute for the Environment and Sustainability	Contemporary Topics in Environmental Sciences	Undergraduate	Focused	An examination of historical and current world environmental conditions. IES 441/IES 541. Environmental Public Health. (3) This course is a study of the effects of human-made and natural physical, biological, and chemical agents on human health. The course explores the interaction of population health, demographics, and environmental determinants of disease. The course covers the basic principles of epidemiology, exposure, risk characterization, disease pathogenesis, and diagnostic testing, as well as the public works and regulatory controls used to limit exposure.
IES 450	institute for the Environment and Sustainability	Environmental Law	Undergraduate	Focused	Introduction to the origins of environmental law; discussion of regulatory agencies; regulation of water pollution, hazardous substances, solid waste, land use, and air pollution.
IES 474	institute for the Environment and Sustainability	Sustainability in Practice	Undergraduate	Focused	Application of sustainability principles to social and environmental problem solving, in an inter-disciplinary and project-based setting. Collaborative design of innovative strategies for addressing and resolving environmental concerns. Reflection on practical challenges of implementing sustainability principles in practice.

IES 494	institute for the Environment and Sustainability	Sustainability Perspectives in Resources and Business			Provides students with interdisciplinary perspectives of sustainability in business and resource management through consideration of the economic, social, and environmental value of organizations. The course covers principles, case studies, and best practices used by organizations in several areas of sustainability, such as energy efficiency and alternatives, waste management and recycling, ecosystem services, product redesign and life cycle management, resource management, and sustainability planning and reporting.
GEO 121	Geography	Earth's Physical Environment	Undergraduate	Focused	Study of the earth's physical environment, using systems approach to understand energy and material cycles, global circulation, and temporal dynamics. Focus on influence of physical processes on spatial patterns and on interrelationships of the atmosphere, soils, vegetation, and landforms.
GEO 122	Geography	Geographic Perspectives on the Environment	Undergraduate	Focused	An introduction to physical geography that enables class participants to understand and interpret the environmental conditions of any geographic locality on earth. Special emphasis is placed on understanding relationships between geographic patterns and processes in the atmosphere (weather and climate), biosphere (vegetation and soils), and lithosphere (landforms). With knowledge of global physical environments, it is possible to predict the suitability an area may have for human habitation, and also the influences certain human activities may have on the physical environment.
GEO 211	Geography	Global Change	Undergraduate	Focused	Application of physical and human geography concepts to understanding processes of change in the use and allocation of resources from combined environmental and social perspectives.
GEO 333	Geography	Global Perspectives on Natural Disasters	Undergraduate	Focused	Exploration of the underlying causes, potential impacts, and mitigation measures of natural hazards including wildfire, severe weather events, and geologic hazards. Particular attention is paid to impacts on humans.
GEO 426	Geography	Watershed Management	Undergraduate	Focused	Impacts of urban and agricultural land use on water resources; common watershed-scale tools for water quality and quantity management.
GEO 436	Geography	Women, Gender, and the Environment	Undergraduate	Focused	Seminar discussing literature on the role of women in their relationships with natural resources as advocates, practitioners, and scholars. Ideas on ecofeminism will be introduced from more developed "north" and developing "south" perspectives, and then directed toward the study of gender and development, and participatory tools in gender analysis.
GLG 115L	Geology and Environmental Earth Science	Understanding the Earth	Undergraduate	Focused	Laboratory course exploring Earth from multiple perspectives. Earth in the solar system; Earth in time; the solid Earth; Earth's surface in flux; Earth's atmosphere and hydrosphere.
GLG 121	Geology and Environmental Earth Science	Environmental Geology	Undergraduate	Focused	A survey of introductory geology with a sub theme of human interaction with the geologic environment. Topics include flooding, earthquakes, volcanoes, water quality and availability, energy, use and abuse of natural resources and land-use planning.
GLG 204	Geology and Environmental Earth Science	Survival on an Evolving Planet	Undergraduate	Focused	Paleontology is the scientific study of past life, and is therefore an interface between geology and biology. It includes such topics as the origin of life, mass extinctions, exceptional fossil preservation, and response of past ecosystems to climate change, to name a few. This course provides an overview of the history of life and an introduction to the primary research areas in paleontology.
GLG 211	Geology and Environmental Earth Science	Chemistry of Earth Systems	Undergraduate	Focused	Material presented serves as the basis for dynamic links with upperdivision courses within the department. The chemical evolution of the Earth is presented spanning all pressure and temperature conditions. Major geological processes are discussed with respect to the chemical principles controlling the distribution of elements and mass, e.g., crustal genesis, metamorphism, metasomatism, formation of the atmosphere and oceans, diagenesis, hydrothermal processes, and low-temperature chemical weathering.
GLG 244	Geology and Environmental Earth Science	Oceanography	Undergraduate	Focused	Examination of the major features of the ocean and the processes active there. Oceanic currents, waves and tides, biologic productivity and zonation, nutrient cycles, chemical parameters, bathymetry, and sediments explored.
GLG 261	Geology and Environmental Earth Science	Geohazards and the Solid Earth	Undergraduate	Focused	Examines solid earth physical principles including theory and application. Applications will focus on the nature of geologic hazards and the Earth's interior, which will then be related to overriding scientific theories like plate tectonics and the observations they are based on.
GLG 307	Geology and Environmental Earth Science	Water and Society	Undergraduate	Focused	Provides a basic scientific understanding of what water is, where it resides and how it moves throughout the entire hydrologic cycle both on a global and watershed scale. Topics emphasize the importance and fragility of water resources and the world-wide threats to those resources. Major issues examined include flooding, water scarcity, irrigation, settlement of arid land, international water conflict and contamination of drinking water supplies. Topics are examined not only through a natural science perspective, but also through perspectives of history, policy, law and societal attitudes.
GLG 354	Geology and Environmental Earth Science	Geomorphology	Undergraduate	Focused	Evolution of landscapes and landforms on Earth and other planets and the processes responsible for their formation. Analysis of landforms to assess the relative role of climate, tectonics, and humans in their formation.
GLG 408	Geology and Environmental Earth Science	Introduction to Hydrogeology	Undergraduate	Focused	Introduction to the physical properties governing groundwaterflow in various geologic media and settings. Methods are explored for determining groundwater-flow directions and velocities and aquifer characteristics and potential. Introduction to groundwaterflow modeling and principles of mass transport and groundwater contamination.
GLG 412	Geology and Environmental Earth Science	Tropical Ecosystems of Costa Rica	Undergraduate	Focused	Introduces students to the structure and function of neotropical ecosystems, as well as to geological, biological, cultural, and economic forces affecting biodiversity in the tropics. This course is taught onsite in Costa Rica.
GLG 413	Geology and Environmental Earth Science	Tropical Marine Ecology	Undergraduate	Focused	Investigates aquatic systems (estuaries, mangroves, coral reefs, seagrass beds, lagoons, beaches, intertidal zones, taxonomy of vertebrates and invertebrates of coral reefs, lagoons and tidal flats) paleobiology and global climate change (paleo-reconstruction of past lagoon environments, fossil coral reefs, and land use). Student research questions concerning biological and physical analyses of a select marine habitat are required. The course is taught on-site in the Florida Keys and the Bahamas.
GLG 428	Geology and Environmental Earth Science	Hydrogeological Modeling: Groundwater Flow and Contaminant Transport and Fate	Undergraduate	Focused	Explores techniques used in constructing and solving mathematical models of groundwater flow and contaminant transport. It reviews and covers the basic theory associated with these processes including the physical processes that govern the flow of groundwater in various geologic media and settings and the chemical, biological and physical processes involved in contaminant transport and fate in groundwater systems. The course explores how to incorporate our understanding of these various processes into numerical models that help us explore and come to a better understanding of natural systems and make predictions. The course also develops familiarity some widely-used packaged models while learning about grid and boundary design, model parameter-value selection, calibration and exploration of uncertainty.
GLG 437	Geology and Environmental Earth Science	Paleontology in Conservation	Undergraduate	Focused	This course explores the needs of conservation scientists, what paleontological data contribute, and new methods for synthesizing modern and paleontological data to develop effective strategies for conservation, remediation, restoration, and policy.

KNH 441	Kinesiology and Health	Environmental Public Health	Undergraduate	Focused	This course is a study of the effects of human-made and natural physical, biological, and chemical agents on human health. The course explores the interaction of population health, demographics, and environmental determinants of disease. The course covers the basic principles of epidemiology, exposure, risk characterization, disease pathogenesis, and diagnostic testing, as well as the public works and regulatory controls used to limit exposure.
MKT 412	Marketing	Sustainable Marketing Management	Undergraduate	Focused	The goal of this course is to provide an overview of the role of sustainability in marketing strategy. We use the triple bottom line perspective to cast sustainability as the simultaneous pursuit of financial, social/relational, and environmental performance. The course provides an assessment of current efforts to pursue sustainability with a primary focus on the interaction of the marketing organization with the environment. In the process, we investigate the interaction between consumption and the physical environment. We examine specific marketing tactics employed by firms seeking to maximize triple bottom line performance. We subsequently address consumption processes in the household, industrial, services, and transportation sectors of the economy.
MME 451	Mechanical and Manufacturing Engineering	Sustainability Considerations in Design and Development	Undergraduate	Focused	This course presents sustainability issues to be considered in the planning process and provides tools to evaluate these for a balanced design. Topics include analysis of interactions between the technical, economic, and societal and policy aspects of sustainability, balance of the technical evaluation (life cycle costs, etc.) against the product's impact on the environment and societal preferences, and applying decision analysis methods to evaluate these preferences and tradeoffs.
MBI 121	Microbiology	The Microbial World	Undergraduate	Focused	Introduces basic concepts in the study of microorganisms - bacteria, viruses, and fungi. Topics include microbial structure and function, metabolism, genetics and the immune system. Special emphasis is placed on the impact of microorganisms on medicine, agriculture, food production, biotechnology, and the environment.
MBI 131	Microbiology	Community Health Perspectives	Undergraduate	Focused	Discussion of community health primarily from the perspective of leading causes of disease and death in the U.S. Exploration of the impact of environment, behavior, and disease, including prevention and treatment strategies, on human health, public resources, and quality of life for society.
MBI 475	Microbiology	Microbial Ecology: Exploration of the Diverse Roles of Microorganisms in Earth's Ecology	Undergraduate	Focused	Integrative examination of the evolution of life, distribution, and abundance of microorganisms, and biogeochemical cycles leading to the discovery of principles used for societal applications such as water quality management and bioremediation.
PHL 376	Philosophy	Environmental Philosophy	Undergraduate	Focused	Critical study of metaphysical, epistemological, and moral problems associated with questions of ecology and humankind's relation to natural environment. Considers such issues as conceptions of nature, character and impact of various forms of technology, relations of environment and economics, environmentalism and justice, and environmental ethics.
PHY 121	Physics	Energy and Environment	Undergraduate	Focused	Application of physics principles and models to societal uses of energy. Includes mechanics, electricity and magnetism, thermodynamics, and atomic and nuclear physics. Energy topics include resources, environmental problems, global atmospheric challenges, nuclear power, solar energy, alternative energy systems, and energy conservation.
SJS 419	Social Justice Studies	Environment, Society, and Justice	Undergraduate	Focused	Interdisciplinary studies of the underlying social aspects of environmental problems and issues. Topics include the unequal distribution of hazardous waste sites, the environmental impacts of war, vulnerability to disaster, the social construction of the environment, population growth, environmental movements, the political economy of the environment, and ecological modernization.
WST 397	Western Program	American Environmental History	Undergraduate	Focused	Introduction to human-natural environment relationships in English North America and the United States, ca. 1600 to present. Chronological and regional approach with emphasis upon political economy and the American conservationist/environmentalist movement.
ATH 571	Anthropology	Ecological Anthropology	Graduate	Focused	Survey of ecological methods and models used by anthropologists in the analysis of cultural-environmental relations and in conservation planning.
ARC 506	Architecture and Interior Design	Seminars	Graduate	Focused	Courses in three of the primary curricular areas: communication process; history and theory; environmental systems/practice. Offerings vary. May include: housing, contemporary architecture theory and practice, vernacular architecture, urban studies, architectural theory, exploration of graphic media, advanced work in building systems, etc. Seminar descriptions available at departmental office during preregistration each semester. Nonmajors encouraged to seek course work in their area of interest.
ARC 513	Architecture and Interior Design	Environmental Systems I	Graduate	Focused	Understanding of the basic principles that inform the design of environmental systems, with an emphasis on the building envelope and energy-efficient systems, heat gain and loss, alternative energy systems, the design and integration of climate control systems (heating, ventilating, air-conditioning), and plumbing and fire prevention systems.
ARC 514	Architecture and Interior Design	Environmental Systems II	Graduate	Focused	Understanding of the basic principles that inform the design of environmental systems, with an emphasis on lighting and power/ data systems. Course topics include acoustics, life-safety systems, and building service systems.
BIO 531	Biology	Global Plant Diversity	Graduate	Focused	Research-focused seminar on floristic, ecological, and cultural influences on global patterns of plant diversity, especially in tropical regions. Comparative topics include the role of disturbances and global environmental change.
BIO 537	Biology	Paleontology in Conservation	Graduate	Focused	This course explores the needs of conservation scientists, what paleontological data contribute, and new methods for synthesizing modern and paleontological data to develop effective strategies for conservation, remediation, restoration, and policy.
BIO/GEO 532	Biology/Geography	Ecoregions of North America	Graduate	Focused	Ecological study of vegetation that applies an understanding of climate, soils, and physiography across the continent toward interpreting major vegetation types and local patterns of diversity. Discussions and field work focus on current research and conservation issues.
BIO 538	Biology	Soil Ecology and Sustainable Use	Graduate	Focused	Introduces processes of soil formation and consequent physical, chemical, and biological properties. Analyzes soil functions related to plant growth, agricultural productivity, water quality, and biodiversity, and evaluates sustainability of the soil resource in the context of environmental change and ecosystem management.
BIO 551	Biology	Conservation Education and Community Engagement	Graduate	Focused	Theory and practice of participatory education, collaborative research, and conservation action for positive ecological, educational, and social change. Includes community engagement projects and case studies in diverse local and global contexts.
BIO 567	Biology	Conservation Biology	Graduate	Focused	Principles of ecology and organismal biology applicable to conservation of uncommon plant and animal populations or ecosystems as related to anthropogenic influences and relevant legislation.

BIO 631	Biology	Conservation Science & Community	Graduate	Focused	Conservation science is a field driven by concern over the impacts of humans on biological resources, species survival, and environmental health. Humans have a considerable capacity to alter environmental systems, harming ourselves and other species. And through it all we display a remarkable resistance to change our behavior to better sustain life, or even to fully grasp the consequences of our actions. Amidst these distressing facts, there are also signs of hope as more people become directly involved in environmental stewardship. Conservation scientists, educators, community leaders, youth, and others have been directly involved in efforts that have brought species back from the brink of extinction, restored ecosystems, and caused the creation of vast protected areas. This course explores the theory and practice of Conservation Science, which will require discussion of concepts central to the field, such as conservation genetics, population biology, and ecology, as well as ideas from other disciplines, since all problems become interdisciplinary when applied to the human condition.
BIO 638	Biology	Climate Change	Graduate	Focused	Global warming is irrevocably altering our polar ice caps, our oceans, our forests, and the world's plant and animal life. In this course, participants study the science of climate change, the diverse causes of climate change, and the impact of climate change at local, regional, and global scales. Topics include global warming's effect on weather and climate, ice caps, deforestation, and species conservation. Because the public plays a central role in how the world responds to climate change, students also investigate the factors that guide public perception, ranging from media to social interaction. Students explore the effect of climate change specific to the biology of their local region and consider what actions they and their communities can take locally. Through project assignments and research, at the end of this course participants not only have a solid understanding of current issues surrounding climate change but will also have considered and developed strategies for taking action.
BIO 641	Biology	Earth Expeditions: Advanced Field	Graduate	Focused	Advanced Field course allows students to more fully and deeply explore community-based conservation, participatory education, and inquiry at an international conservation site they have previously visited during a past Earth Expeditions course. Possible field sites for the Advanced Field course include Baja, Belize, Borneo, Costa Rica, Guyana, Hawai'i, Kenya, Mongolia, Namibia, and Thailand (see EarthExpeditions.org for detailed descriptions of each field site).
BIO 642	Biology	Amazon: Avian and Tropical Ecology	Graduate	Focused	In the Amazonian Neotropical regions of Peru, reality has attained mythic proportions: more than 400 species of mammal, 1,300 bird species, 3,000 fish, 40,000 plants, and 2.5 million insect species. And still counting. Why is this area of South America the most diverse on the planet? How have the varied human groups that inhabit this region adapted to their unique environments? And perhaps the most relevant question for life on Earth, what is the future of the Amazon? Students travel to the Peruvian Amazon rainforest and work with educators, researchers, and local communities to better understand the evolution and maintenance of biodiversity in this region, and to experience firsthand the effects of human interventions in the Amazon, from deforestation and urbanization to restoration efforts by local groups.
BIO 643	Biology	Australia: Great Barrier Reef	Graduate	Focused	One of the seven wonders of the natural world, the Great Barrier Reef lies in the clear blue waters off the northeast coast of Australia. This complex reef system is not only the world's greatest expanse of coral, it is the Earth's largest living structure, a massive, beautiful, and ancient biological phenomenon of bewildering diversity and immense ecological significance. This graduate course is offered jointly with Reef HQ Aquarium, Australia's National Education Centre for the Great Barrier Reef. We sleep near the corals in the aquarium itself, venturing forth on several excursions for direct research on the Great Barrier Reef, and hiking in some of Australia's unique terrestrial habitats. Discussion topics include marine science issues, citizen engagement in marine science and environmental stewardship.
BIO 664	Biology	Baja: Field Methods	Graduate	Focused	Students discover the rich waters and terrestrial ecosystems of Baja's UNESCO World Heritage site and biosphere reserve on the Sea of Cortez. Bahia de los Angeles is a unique ecoregion with remarkable marine and terrestrial environments. Students also explore Rancho San Gregorio, a family-owned ranch located in a small canyon where its isolation and climate make it a hotspot for desert investigations. Students gain proficiency in applying field methods to ecological questions and conservation practice. A premise of this course is that field methods are not only essential for ecological research, they can serve as the basis for participatory education, public engagement in science, and community-based environmental stewardship. Many groups, from teachers leading schoolyard ecology to parataxonomists involved in ethnobotanical research, share a need for reliable information obtained through robust field methods to build understanding and to promote informed action.
BIO 645	Biology	Belize: Approaches to Environmental Stewardship	Graduate	Focused	Students join our partner, the Belize Zoo, and explore diverse terrestrial, coastal, and coral reef communities of Belize, while learning about conservation programs on such species as harpy eagles, jaguars, manatees, and howler monkeys. Possible investigations include monitoring manatee population dynamics, human influence on coral reefs, aquatic mangrove species sampling, and species behavior studies at the Belize Zoo. Discover the power of inquiry to generate knowledge and inspire conservation. All students will have the chance to conduct an investigation of the local ecosystem, asking their own questions, collecting data, and presenting conclusions.
BIO 646	Biology	Borneo: Primate Conservation	Graduate	Focused	Borneo's primate community is exceptionally rich, including proboscis monkeys, which occur only in Borneo, leaf monkey, macaque, gibbons, tarsier and slow loris. Of greatest conservation concern is the orangutan, which occurs naturally on only two islands in the world, Borneo and Sumatra, and is under increasingly severe pressure, primarily from habitat loss. The orangutan, the only great ape in Asia, may completely vanish from the wild within two decades. Partnered with the Woodland Park Zoo, we will join researchers from the NGO Hutan and the Danau Girang Field Centre, and villagers of the Kinabatangan region who are responsible for model communitybased efforts to preserve orangutans, Bornean pygmy elephants, and other species. In addition to exploring primatological field methods, students will work with local groups and develop new ways to engage communities worldwide in saving orangutans and other wildlife.
BIO 647	Biology	Guyana: Local Wisdom and Conservation	Graduate	Focused	Guyana's rain forests are part of the Guiana Shield considered one of the last four Frontier Forests in the world. Guyana is famous for its relative abundance of iconic Amazonian species such as jaguars, arapaima (a "living fossil" and one of the largest freshwater fishes in the world), harpy eagles, giant anteaters, giant river otter, and the giant water lily. Guyana is also culturally and ethnically diverse. We will spend most of our time with the Makushi, an indigenous group that has lived in these forests and savannas for thousands of years. The Makushi and their lands face a striking transition as the forces of development provide new opportunities and challenges, the greatest perhaps being the rapid extinction of traditional knowledge. Conscious of the value of indigenous and non-indigenous knowledge, Guyana's Makushi people are becoming masters of straddling both worlds.

BIO 648	Biology	Hawai'i: Saving Species	Graduate	Focused	The extraordinary island ecosystems of Hawai'i evolved in isolation over millions of years, and the islands have long been home to species that occur nowhere else on the planet. However, since the arrival of humans, native species have been under tremendous threat, and by many measures Hawai'i is becoming one of the United States' most profound conservation failures. Habitat destruction, environmental degradation, introduced species, and other forces have made Hawai'i a global center for extinction. Students in this course will join with San Diego Zoo Global (SDZG), Project Dragonfly, and Hawaiian partners to explore what it takes to save species in the wild. We will focus especially on the inspirational work of SDZG's Institute for Conservation Research, which uses science, education, and community programs to rescue species from the brink of extinction. We expect Earth Expedition's Hawai'i program to immerse graduate students and local partners in developing and testing sitespecific methods of community engagement to sustain ecological and social health
BIO 649	Biology	Kenya: Wildlife and People in Integrated Landscapes	Graduate	Focused	The South Rift Valley of Kenya is one of the most spectacular wildlife areas on the planet. Project Dragonfly has partnered with the Cincinnati Zoo & Botanical Garden and the African Conservation Centre to advance community-based conservation in this dynamic landscape. This effort builds on the decades-long research of Dr. David Western, former head of the Kenya Wildlife Service, and the centuries-long research of the Maasai pastoralists, who have long co-existed with wildlife in an open grassland ecosystem populated by elephants, lions, giraffes, zebra, wildebeests, and a remarkable diversity of other species. With the rise of nontraditional lifestyles, private ranches, and fenced lands that prevent needed wildlife migrations, communities of the South Rift have recognized the need to understand the impact of these changes and to work together for a better future. Join Kenyan conservationists, educators, community leaders, and youth to study sustainable approaches to human/wildlife coexistence.
BIO 651	Biology	Mongolia: Steppe Ecology and Civic Media	Graduate	Focused	Students travel to Mongolia, the "Land of Blue Sky." The birthplace of the Mongol Empire, the largest contiguous empire in human history, Mongolia is now a vibrant democracy and home to an open wilderness that has few parallels in the modern world. We will explore the great steppes, and especially engage in the conservation story of two key steppe species: Pallas' cats and Przewalski's horse. Pallas' cats are important steppe predators whose conservation provides insights into the challenges facing the survival of small wild cats worldwide. Przewalski's horse, also called takhi, are considered to be the only true wild horse left in the world. We will join research on an ambitious reintroduction project based in Mongolia that has returned this remarkable species to its former homeland after being driven to extinction in the wild.
BIO 652	Biology	Thailand: Buddhism and Conservation	Graduate	Focused	Students travel to Thailand to investigate this country's astonishing Old World rain forests and diverse cultural environments. This course will address key topics in ecology while exploring emerging models of conservation and education. Possible research projects include Buddhism and the environment, indigenous ecological knowledge, spiritual connections to nature, and community forests. Discover the power of inquiry to generate knowledge and inspire conservation. All students conduct an investigation of the local ecosystem, asking their own questions, collecting data, and presenting conclusions.
BIO 653	Biology	India: Species, Deities and Communities	Graduate	Focused	Students journey to India through the rich ecological, cultural, and spiritual landscapes of the Western Ghats, exploring sacred groves and forest temples where the fate of wildlife, people, and deities meet. The Western Ghats region is well known to conservationists as a biodiversity hotspot, home to diverse local ecosystems with an abundance of plant and animal species found nowhere else. The existence of sacred groves in the Western Ghats predates recorded history. For social scientists, sacred groves are valued as centers for community life. For the spiritually inclined, sacred groves transcend earthly bounds, allowing people to commune with gods and other powerful beings that offer protection, enlightenment, absolution, or guidance. In this course, we seek to better understand the multifaceted relationship between people and nature, and we address specific questions about a sustainable future.
BIO 654	Biology	Foundations of Inquiry	Graduate	Focused	This course engages students in exploring the foundations of inquiry-based teaching and learning while students gain a new familiarity with Advanced Inquiry Program (AIP) Master Institution (MI) facilities as informal science education settings. Through making observations on zoo grounds, developing comparative questions, devising investigations to answer those questions and communicating results, participants will experience the full process of inquiry and will learn how to guide this process with their own students and in their own communities. This type of firsthand, experiential learning encourages independent and critical thinking, increasing the communities' awareness and concern for the local environment and its inhabitants. We will engage in activities that demonstrate the applications of inquiry in the classroom, on zoo grounds, in the schoolyard and other settings. Through this course, students will develop the investigation, critical reflection, and collaboration skills needed to lead inquiry-driven learning for diverse communities.
BIO 655	Biology	Master Plan in Action	Graduate	Focused	The AIP Master Plan (MP) represents a student's ideas and areas of interest as those ideas relate to the student's professional and community goals. By writing a Master Plan, students are able to focus their AIP journey and visualize the actions and steps that they might take toward completing their master's degree during the 2.5- to 5- year timeframe. During this course with guidance and input from peers and the AIP Cohort advisor, students work on completing their Master Plans. This method ensures that students have a workable plan that helps them anticipate ways to incorporate the projects they create as part of their AIP experiences into their professional and life goals. Students will also think about the common threads and program tenets among the projects in this cohesive body of work, which ultimately becomes their final master's portfolio due as the culminating experience at the end of their degree.
BIO 656	Biology	Environmental Stewardship in My Community	Graduate	Focused	Students in this course investigate environmental stewardship, research science and conservation opportunities and solutions in their local communities, practice inquiry-based learning, develop a conservation project to be used in their classroom or community, and reflect on ecological and carbon footprints. At the end of this course, students will have a solid understanding of community-based conservation, with a particular emphasis on current issues facing local habitats in the communities where they live. Students will also explore and begin to design stewardship strategies for empowering their own students or community members to generate solutions and take action.

BIO 657	Biology	Regional Ecology	Graduate	Focused	Through both zoo-based and field-based experiences, this course explores regional wildlife conservation issues, as well as field investigation techniques that scientists and citizens can use to study and conserve local ecoregions and wildlife. Students will be exposed to observational and experimental approaches and will practice field investigation techniques that can provide rigorous, engaging inquiry experiences for students. Student-conducted investigations will be used to contribute to local ecological knowledge by describing natural systems, noting differences in habitats, and identifying environmental trends and issues. This course focuses on different ecoregions in the area and highlights different conservation issues or themes based on that ecoregion.
BIO 658	Biology	Ecophysiology	Graduate	Focused	Students in this course will explore the ways in which humans can (and do) emulate systems and designs found in nature to create materials, medicines, social systems, computers and so much more. Students will fine tune their observation skills and complete a design challenge using nature as their guide. Through this course, students will develop their observation and collaboration skills and will acquire research experience in the life sciences on such topics as the principles of ecophysiology, form and function of organismal adaptations, phenotypic and behavioral plasticity, and maintenance of homeostasis. Students will think critically and scientifically about the ways in which nature can benefit humankind through technological inspiration and solutions to environmental problems. Students will apply what they have learned as they develop curricula and create design challenges for professional use.
BIO 659	Biology	Great Lakes Ecosystems	Graduate	Focused	The focus of this course is the study of the biology of the Great Lakes watershed, combining classroom work with field science inquiry and research. In addition to exploring the general function of watersheds, students become familiar with historical and contemporary human influences on ecosystems within the watershed basin, and they discuss and understand negative human impacts including point and non-point source pollution, multiple-stressors, "urban stream syndrome," and local sewage treatment and its relationship to the basin. Students gain skills observing and describing biotic and abiotic characteristics of area watershed ecosystems and understand the status of threatened and endangered species in the watershed basin.
BIO 662	Biology	Animal Behavior and Conservation	Graduate	Focused	Investigations of animal behavior comprise a rich field of study that began as a means to survival for early humans. It has now become a captivating field of scientific study in its own right. Invertebrates, birds, mammals, reptiles, amphibians, and other animals are ideal for comparative observational studies on topics ranging from complex behaviors and adaptations to public engagement with conservation. Students in this course investigate animal behavior through direct observation of the zoo's diverse animal species to explore key questions about how and why species act the way they do in different situations. This course will provide a foundation for understanding ethological research methods and animal conservation issues that can be applied and adapted to increased understanding about animal welfare and wildlife conservation in local educational and community settings.
BIO 667	Biology	Conservation Research at Living Collection Institutions	Graduate	Focused	This course provides students with an overview of conservation research conducted in zoological, reserve, aquaria and other ex situ settings. Students will explore key science concepts within the contexts of wildlife conservation, the imperative of in-situ conservation, the multi-disciplinary nature of science, and hands-on conservation research. Participants will learn about current research in the fields of genetics, reproductive physiology, disease diagnostics, ecology, and animal behavior. Course themes explore sustainable population maintenance, wildlife health, bioresource banking, restoration ecology, reintroduction biology, and the role of zoos, reserves and aquaria in conservation.
BIO 668	Biology	Biology Through Inquiry	Graduate	Focused	This course will explore fundamental topics in biology from a student-driven, inquiry-based perspective. Course topics include cell biology, plant biology, DNA and gene expression, evolution, diversity of life and classification, populations, communities, and ecosystems. Students will conduct mini-inquiries throughout the course, helping to link core concepts to their everyday lives. Through collaborative discussions, students will further their understanding of these key concepts and articulate relationships between biology and many of the major challenges currently facing humanity. Finally, students will conduct their own biological investigation, developing skills in experimental design, data collection, and communication of findings.
BIO 671	Biology	Population and Community Ecology	Graduate	Focused	Principles and applications of population and community ecology: population dynamics, direct and indirect species interactions, food webs, species diversity.
BIO 672	Biology	Ecosystem and Global Ecology	Graduate	Focused	Structure, dynamics and management of ecosystems and the biosphere, including food web interactions, nutrient cycling, ecosystem functioning, and biogeochemical cycles at local, regional and global scales.
BIO 691	Biology	Costa Rica: Ecology and Ecotourism	Graduate	Focused	Students join a summer field course in Costa Rica to explore Neotropical systems, including lowland rain forest and cloud forest; engage in inquiry and action projects on vital issues in education and conservation.
BIO 692	Biology	Namibia: Great Cat Conservation	Graduate	Focused	Students join a summer field course in Namibia, Africa, to connect with the Cheetah Conservation Fund, the global center of cheetah conservation worldwide; engage in inquiry and action projects on vital issues in education and conservation.
BIO 694	Biology	Habitats, Adaptations and Evolution: Earth Expeditions	Graduate	Focused	Students will complete a semester-long research project to explore habitats, evolutionary theory and adaptation; create research questions which can also cover individual classroom goals or district goals or state or national standards.
BIO 695	Biology	Plants and People: Earth Expeditions	Graduate	Focused	Students will complete a semester-long research project to explore emerging, vital conversation about the role of nature in human development and learning, with a particular focus on plants and their use in education; generate knowledge and illuminate the relationship between plants and people.
BIO 696	Biology	Primate Behavior and Conservation	Graduate	Focused	Students will complete a semester-long research project to investigate primate conservation and behavior through direct observation of prosimians, monkeys, and apes at the Cincinnati Zoo & Botanical Garden.
BUS 594	Business Analysis	Sustainability Perspectives in Resources and Business	Graduate	Focused	Provides students with interdisciplinary perspectives of sustainability in business and resource management through consideration of the economic, social, and environmental value of organizations. The course covers principles, case studies, and best practices used by organizations in several areas of sustainability, such as energy efficiency and alternatives, waste management and recycling, ecosystem services, product redesign and life cycle management, resource management, and sustainability planning and reporting.
CPB 505	Chemical, Paper, and Biomedical Engineering	Industrial Environmental Control	Graduate	Focused	Survey of environmental issues facing the industry and how the industry addresses these issues. In-plant pollution abatement alternatives discussed as well as external treatment. Computer-based modeling applications introduced and applied to problems. Design considerations involved in selecting among alternative pollution control strategies are presented and applied to examples.

CPB 541	Chemical, Paper, and Biomedical Engineering	Pollution Prevention in Environmental Management	Graduate	Focused	Provides understanding of how corporations respond to governmental regulation by setting up environmental management systems which employ the principles of pollution prevention. Engineering concepts such as material balances, energy balances, risk assessment, and life cycle assessment have impacted new process designs. In this course a basis for evolution and maturation of pollution prevention as a fundamental methodology to ensure compliance and economic sustainability of industrial processes will be provided. The understanding of the concepts of pollution will be demonstrated by participation in a class project sponsored by industry at one of their facilities.
CPB 542	Chemical, Paper, and Biomedical Engineering	Air Pollution Control	Graduate	Focused	This course will introduce students to the formation and control of air pollutants, engineering theories and principles pertaining to the design of air pollution control operations, and environmental legislation. Solutions to environmental problems will be investigated, considering technical, economical and ethical aspects of engineering.
ECO 506	Economics	Environmental Economics	Graduate	Focused	Economic analysis of environmental quality. Strategies for collective environmental action. Benefit-cost analysis. Economic growth and environmental quality.
IES 511	Institute for the Environment and Sustainability	Environmental Protocols	Graduate	Focused	Lecture/field laboratory course will integrate the collection, analysis, management, evaluation and presentation of environmental measurements. One lab and two lectures per week. Appropriate for all environmental practitioners.
IES 512	Institute for the Environment and Sustainability	Tropical Ecosystems of Costa Rica	Graduate	Focused	Introduces students to the structure and function of neotropical ecosystems, as well as to geological, biological, cultural, and economic forces affecting biodiversity in the tropics. This course is taught onsite in Costa Rica.
IES 519	Institute for the Environment and Sustainability	Environment, Society, and Justice	Graduate	Focused	Interdisciplinary studies of the underlying social aspects of environmental problems and issues. Topics include the unequal distribution of hazardous waste sites, the environmental impacts of war, vulnerability to disaster, the social construction of the environment, population growth, environmental movements, the political economy of the environment, and ecological modernization.
IES 523	Institute for the Environment and Sustainability	Tropical Marine Ecology	Graduate	Focused	Investigates aquatic systems (estuaries, mangroves, coral reefs, seagrass beds, lagoons, beaches, intertidal zones, taxonomy of vertebrates and invertebrates of coral reefs, lagoons and tidal flats) paleobiology and global climate change (paleo-reconstruction of past lagoon environments, fossil coral reefs, and land use). Student research questions concerning biological and physical analyses of a select marine habitat are required. The course is taught on-site in the Florida Keys and the Bahamas.
IES 529	Institute for the Environment and Sustainability	Environmental Communication	Graduate	Focused	Examines theories, principles, and methods for communicating environmental concepts and scientific information verbally, textually and visually to a range of audiences and stakeholders. Students will work with scientists, peer communities, clients, and focus groups to develop effective and appropriate environmental communications across mediums. Projects may include producing scientific posters, writing reviews of research projects on an environmental problem, preparing oral presentations, creating visual story of scientific work, interviewing scientists for a general news story, writing environmental proposals, and facilitating focus groups.
IES 531	Institute for the Environment and Sustainability	Principles and Applications of Environmental Science	Graduate	Focused	Analysis of the relationship of human beings to the environment, specifically assessment of their impact on the environment as a whole. Attempts to outline the evolution and present status of many environmental problems, presents possible solutions, and attempts to predict our future relationship with nature.
IES 539	Institute for the Environment and Sustainability	Stream Assessment Protocols for Habitat and Water Quality	Graduate	Focused	An introduction to principles and methods for assessment of surface water quality and habitat. The course prepares students with practical skills needed to attain Qualified Data Collector (QDC) status with the Ohio Environmental Protection Agency using Qualitative Habitat Evaluation Index (QHEI) and chemical water quality to assess the condition of streams. Lecture and field activities will help students attain Level 1 QDC status for chemical water quality analysis and Level 2 QDC status for QHEI. Independent assessments of streams, individual work on study plans, and application to the state is required for OEPA certification.
IES 540	Institute for the Environment and Sustainability	Contemporary Topics in Environmental Sciences	Graduate	Focused	An examination of historical and current world environmental conditions.
IES 541	Institute for the Environment and Sustainability	Environmental Public Health	Graduate	Focused	This course is a study of the effects of human-made and natural physical, biological, and chemical agents on human health. The course explores the interaction of population health, demographics, and environmental determinants of disease. The course covers the basic principles of epidemiology, exposure, risk characterization, disease pathogenesis, and diagnostic testing, as well as the public works and regulatory controls used to limit exposure.
IES 550	Institute for the Environment and Sustainability	Environmental Law	Graduate	Focused	Introduction to the origins of environmental law; discussion of regulatory agencies; regulation of water pollution, hazardous substances, solid waste, land use, and air pollution.
GEO 526	Geography	Watershed Management	Graduate	Focused	Impacts of urban and agricultural land use on water resources; common watershed-scale tools for water quality and quantity management.
GEO 536	Geography	Women, Gender, and the Environment	Graduate	Focused	Seminar discussing literature on the role of women in their relationships with natural resources as advocates, practitioners, and scholars. Ideas on ecofeminism will be introduced from more developed "north" and developing "south" perspectives, and then directed toward the study of gender and development, and participatory tools in gender analysis.
GLG 508	Geology and Environmental Earth Science	Introduction to Hydrogeology	Graduate	Focused	Introduction to the physical properties governing groundwaterflow in various geologic media and settings. Methods are explored for determining groundwater-flow directions and velocities and aquifer characteristics and potential. Introduction to groundwaterflow modeling and principles of mass transport and groundwater contamination.
GLG 513	Geology and Environmental Earth Science	Tropical Marine Ecology	Graduate	Focused	Investigates aquatic systems (estuaries, mangroves, coral reefs, seagrass beds, lagoons, beaches, intertidal zones, taxonomy of vertebrates and invertebrates of coral reefs, lagoons and tidal flats) paleobiology and global climate change (paleo-reconstruction of past lagoon environments, fossil coral reefs, and land use). Student research questions concerning biological and physical analyses of a select marine habitat are required. The course is taught on-site in the Florida Keys and the Bahamas.
GLG 528	Geology and Environmental Earth Science	Hydrogeological Modeling: Groundwater Flow and Contaminant Transport and Fate	Graduate	Focused	Explores techniques used in constructing and solving mathematical models of groundwater flow and contaminant transport. It reviews and covers the basic theory associated with these processes including the physical processes that govern the flow of groundwater in various geologic media and settings and the chemical, biological and physical processes involved in contaminant transport and fate in groundwater systems. The course explores how to incorporate our understanding of these various processes into numerical models that help us explore and come to a better understanding of natural systems and make predictions. The course also develops familiarity some widely-used packaged models while learning about grid and boundary design, model parameter-value selection, calibration and exploration of uncertainty.
GLG 537	Geology and Environmental Earth Science	Paleontology in Conservation	Graduate	Focused	This course explores the needs of conservation scientists, what paleontological data contribute, and new methods for synthesizing modern and paleontological data to develop effective strategies for conservation, remediation, restoration, and policy.

KNH 541	Kinesiology and Health	Environmental Public Health	Graduate	Focused	This course is a study of the effects of human-made and natural physical, biological, and chemical agents on human health. The course explores the interaction of population health, demographics, and environmental determinants of disease. The course covers the basic principles of epidemiology, exposure, risk characterization, disease pathogenesis, and diagnostic testing, as well as the public works and regulatory controls used to limit exposure.
MME 551	Mechanical and Manufacturing Engineering	Sustainability Considerations in Design and Development	Graduate	Focused	This course presents sustainability issues to be considered in the planning process and provides tools to evaluate these for a balanced design. Topics include analysis of interactions between the technical, economic, and societal and policy aspects of sustainability, balance of the technical evaluation (life cycle costs, etc.) against the product's impact on the environment and societal preferences, and applying decision analysis methods to evaluate these preferences and tradeoffs.
MBI 672	Microbiology	Ecosystem and Global Ecology	Graduate	Focused	Structure, dynamics and management of ecosystems and the biosphere, including food web interactions, nutrient cycling, ecosystem functioning, and biogeochemical cycles at local, regional and global scales. Prerequisites: at least one course in general ecology and general chemistry.
MBI 575	Microbiology	Microbial Ecology: Exploration of the Diverse Roles of Microorganisms in Earth's Ecology	Graduate	Focused	Integrative examination of the evolution of life, distribution, and abundance of microorganisms, and biogeochemical cycles leading to the discovery of principles used for societal applications such as water quality management and bioremediation.
SJS 519	Social Justice Studies	Environment, Society, and Justice	Graduate	Focused	Interdisciplinary studies of the underlying social aspects of environmental problems and issues. Topics include the unequal distribution of hazardous waste sites, the environmental impacts of war, vulnerability to disaster, the social construction of the environment, population growth, environmental movements, the political economy of the environment, and ecological modernization.
ARC 211	Architecture and Interior Design	Introduction to Landscape and Urban Design	Undergraduate	Related	Introduction to principles and elements of the larger environment: landscape and urban design.
ATH 145	Anthropology	Lost Cities & Ancient Civilizations	Undergraduate	Related	Archaeological and anthropological approaches for understanding human cultural, social, and ecological adaptations in global prehistory. Examines similarities and differences among prehistoric peoples and civilizations and their global contexts and interconnectedness in terms of political economy and social organization; technologies, engineering, and environment; and religion and symbolic systems.
ATH 155	Anthropology	Introduction to Anthropology	Undergraduate	Related	Introduction to anthropology with emphasis on understanding the social and biological contexts of human life. Topics include the biological and cultural origins of humanity, prehistory, and cultural diversity.
ATH 175	Anthropology	Peoples of the World	Undergraduate	Related	Provides an appreciation of human cultural, social, and linguistic variation around the world and through time. Develops anthropological and ethnographic approaches to understanding cultural differences and similarities in political, social and economic organization; marriage and family patterns; environment and beliefs systems; and other aspects of globalized human cultural life.
ATH 185	Anthropology	Cultural Diversity in the U.S.	Undergraduate	Related	Anthropological and ethnographic approaches to the study of cultural, social, and linguistic variation in the United States, its territories, and borderlands. As an introduction to cultural anthropology, the course provides a foundation for understanding historical and contemporary contexts related to globalization and diaspora; ethnic, racial, and class identities; political economy and environment; belief systems; and ethnographic methodology.
ATH 348	Anthropology	Introduction to Medical Anthropology	Undergraduate	Related	Topics and theoretical approaches of medical anthropology. Explores why disease emerges within particular socio-cultural settings and how people in those settings understand and treat their illness. Topics include historical and current pandemics, culturally specific illnesses, local medical practices, and individuals' struggles with particular illness.
ATH 405	Anthropology	Food, Taste, and Desire	Undergraduate	Related	Explores food consumption as a meaningful practice embedded in local, national, and global relations and in social, economic, and political contexts. Topics include history of food consumption; food and power; nation, the state, and food; gender, sexuality and consumption; consumption, marketing, and subjectivity; globalization; hunger and memory; need, taste, and desire; and food aesthetics, moralities, and poetics.
BIO 115	Biology	Biological Concepts: Ecology, Evolution, Genetics, and Diversity	Undergraduate	Related	Integrated study of microbes, plants, and animals emphasizing biological diversity and interdependence of life and environment.
BIO 116	Biology	Biological Concepts: Structure, Function, Cellular, and Molecular Biology	Undergraduate	Related	Biological principles common to microbes, plants, and animals, including interactions between organism and environment.
BIO 155	Biology	Field Botany	Undergraduate	Related	Field/laboratory-oriented, interpretive introduction to botany in the regional out-of-doors. Emphasis given to identification, uses, habit, habitat and communities of plants, and fungi in the context of local terrestrial and aquatic environments.
BIO 221	Biology	Plant Propagation	Undergraduate	Related	Provides students with knowledge of the scientific and applied aspects of plant propagation in a closed system including basic plant production, watering, fertilization, crop management, insect and disease control, and problem solving.
BIO 400	Biology	Capstone Seminar: Contemporary Issues in Biology	Undergraduate	Related	Requires seniors to critically evaluate and form positions on current biological issues of national interest. Format, theme, and topics change from term to term. Examples of themes include the management and use of natural resources, preservation of biological diversity, nature of the medical profession, and issues raised by advances in biotechnology.
BIO 401	Biology	Plant Ecology	Undergraduate	Related	Studies of plant communities, populations, and individuals in relation to their environment.
BIO 425	Biology	Environmental Plant Physiology	Undergraduate	Related	Examines the structure and function of plants from the cellular to the whole plant level focusing on plant-environment interactions.
BIO 463	Biology	Limnology	Undergraduate	Related	Physical, chemical, and biological characteristics of freshwater ecosystems.
BWS 156	Black World Studies	Introduction to Africa	Undergraduate	Related	A survey of Africa's varied and complex history and culture. It focuses on African geography, environment, history, economics, politics, as well as its rich cultural heritage. It approaches the study of Africa from a comparative historical and interdisciplinary perspective as well as situates it within the context of global developments.
BWS 386	Black World Studies	Race in U.S. Society	Undergraduate	Related	Examines the historical contexts within which major transformations in racial practices and policies have taken place and analyzes racialized customs and behaviors in the United States across time and place.
BWS 470	Black World Studies	Social/Political Activism	Undergraduate	Related	Provides students with the opportunity to explore how indigenous groups effect change in their communities.
CPB 471	Chemical, Paper, and Biomedical Engineering	Engineering Design I	Undergraduate	Related	Involves application and synthesis of accumulated knowledge in a major, open-ended, industrial research/design project. Critical elements of the design process and real world constraints (economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability) are considered. Emphasis is placed on oral and written communication skills. Students from different academic backgrounds are assigned to multidisciplinary project teams in order to utilize their varied experiences, knowledge, learning styles, and skills to achieve a successful conclusion to each project.

CMR 111	Commerce	Introduction to Management	Undergraduate	Related	Introduction to principles and practices of managing organizations. Exposure to contemporary management issues, functions of management, and the interrelationship between business organizations and the environment. Emphasis on development of supervisory skills.
ECO 131	Economics	Economic Perspectives on Inequality in America	Undergraduate	Related	Introduction to economic perspectives on inequality in the United States, particularly the relationship between inequality and population diversity. The role of the market and of public policy in generating, transmitting, and ameliorating inequality. Dimensions of inequality include earning inequality, poverty, and unequal access to education and health care. Dimensions of diversity include race, ethnicity, gender, age, socioeconomic class, immigration status, and sexual orientation.
ECO 347	Economics	Economic Development	Undergraduate	Related	Analysis of current problems of developing countries in Asia, Africa, and Latin America. Emphasis on the role of economic theory in devising policies to achieve improvements in the level and distribution of economic welfare in these countries.
ECO 373	Economics	Economic Growth	Undergraduate	Related	Investigates the sources of economic growth within a country and the factors that affect relative growth across countries. The course addresses issues of income convergence and the role of policy in determining the long-run rate of growth.
EDL 383	Educational Leadership	Service in Urban Communities	Undergraduate	Related	The purpose of this course is to afford students the opportunity to implement or be involved in a service project in or with a local urban community that will run over the duration of the semester. The course provides students the opportunity to further develop themselves as servant-leaders who are culturally proficient, critically aware of the race and class dynamics that shape life in urban communities, and thoughtful about how best to respond to challenges that hinder community wellbeing.
ESP 331	Entrepreneurship	Social Entrepreneurship	Undergraduate	Related	This course introduces students to the opportunities and challenges associated with building and growing enterprises that are both self sustaining and focused on a social mission. Students will engage in an experiential learning process with others to develop a better understanding of the domain of social entrepreneurship including the development, measurement and assessment of various social enterprises.
FSW 362	Family Sciences and Social Work	Family Poverty	Undergraduate	Related	Examines definitions, theories, causes and consequences of family poverty in the U.S. Identifies the extent and degree of U.S. poverty and demographic characteristics of those who are poor or likely to become poor. Consideration given to programs that reduce poverty and/or its negative effects, including those practiced in the past, those now practiced, and those that offer promise for improving the economic and social status of those who are poor. Costs and benefits of welfare and welfare reform and strategies for preventing poverty among future generations also discussed and evaluated.
FSW 206	Family Sciences and Social Work	Social Welfare: Impact on Diverse Groups	Undergraduate	Related	Critical analysis of historical and current interactions of social welfare policies, programs, and services with diverse recipient populations. Attention given to contexts in which social welfare has been developed and provided.
FSW 309	Family Sciences and Social Work	Social Welfare Policy II	Undergraduate	Related	Promotes knowledge of the nature and impact of policy decisions on the social welfare of diverse groups. Special attention given to disenfranchised, oppressed, and impoverished groups. Students acquire beginning skills in policy practice and value-driven advocacy.
GEO 101	Geography	Global Forces, Local Diversity	Undergraduate	Related	Application of human geography concepts to patterns and processes of economic, political, and cultural changes at global, regional and local scales.
GEO 111	Geography	World Regional Geography: Patterns and Issues	Undergraduate	Related	Introduction to world geography emphasizing regional approach and comparisons; combines analysis and synthesis of characteristics distinctive to each principal culture realm; focuses upon selected topical issues involving ethnic, political, economic, social, and environmental aspects.
GEO 201	Geography	Geography of Urban Diversity	Undergraduate	Related	Introduction to the processes and patterns that shape life in the American City. Students interpret urban landscapes—historical and contemporary—in relation to their environmental, economic, and cultural contexts. Students develop a geographic perspective on the social and spatial development of diverse American communities, a necessary foundation for addressing current issues in urban development and planning.
GEO 205	Geography	Population and Migration	Undergraduate	Related	Examines the spatial distribution and dynamics of human fertility, mortality, and migration, primarily in the contemporary period, as well as the interaction of these trends with environmental, economic, and political issues. Special attention is given to interpreting and evaluating quantitative measures of population geography.
GEO 309	Geography	Native American Women	Undergraduate	Related	A survey of writings and film by and about Native American women. The objective of the course is to provide students with a broad overview of Native American perspectives on a variety of topics including indigenous viewpoints on research methods, environmental activism, politics and policy, and critical analysis.
GEO 406	Geography	Indigenous Peoples and Their Sacred Lands	Undergraduate	Related	An in depth look at topics related to policy and land management practices that impact indigenous peoples nationally, as well as internationally. The major focus of the various case studies is on designated sacred lands of Native American tribes within the United States. The course provides students with interdisciplinary training about indigenous cultures and human rights.
GEO 425	Geography	Hydrogeography	Undergraduate	Related	Investigation of the hydrologic cycle focusing on the surficial component parts of precipitation, infiltration, soil moisture, evaporation, transpiration, and surface runoff, and variation of these from place to place over the earth's surface.
GEO 444	Geography	GIScience Techniques in Landscape Ecology	Undergraduate	Related	Using geographic tools such as geographic information systems (GIS), remote sensing, global positioning system (GPS) receivers, and computer-based analysis, students will study a range of current topics in landscape ecology.
GEO 451	Geography	Urban and Regional Planning	Undergraduate	Related	Introduction to the purposes and possibilities of urban and regional planning. Topics include historical development and theoretical rationale of planning, analytical techniques, and policy and design strategies for addressing urban problems. Surveys contemporary urban issues and areas of planning specialization. Prepares students with fundamental concepts and skills for careers in urban planning and development.
GEO 454	Geography	Urban Geography	Undergraduate	Related	Geographic principles related to the distribution, function, structure, and regional settings of urban centers.
GEO 455	Geography	Race, Urban Change, and Conflict in America	Undergraduate	Related	Since the 1960s, changes at both global and local levels have affected the American city. Traditional study of the city has not focused on race and the effect of such changes on race. Conflicts with racial undertones occur on a daily basis in most American cities. More often these are conflicts over production, distribution, and consumption of public and private goods and are manifest in the housing market, job market, and access to education and social services amongst others.
GEO 475	Geography	Global Periphery's Urbanization	Undergraduate	Related	Countries of the Third World have experienced an unprecedented rate of urban growth and expansion since the middle of this century. As Third World countries continue to industrialize, urbanization and related problems will increasingly become important and will continue to be on the agendas of national governments, international agencies, planners, and academics well into the next century. Explores Third World (Africa, Asia, and Latin America) urbanization literature from an interdisciplinary perspective.

GHS 101	Global Health Studies	Introduction to Global Health	Undergraduate	Related	Introduces students to the complexity and ethical dilemmas of global health as a practical field that seeks to work with organizations and local communities to solve health problems. Students will learn to assess knowledge from multiple disciplines to thoroughly describe global health problems
GHS 201	Global Health Studies	Data and Decisions in Global Health	Undergraduate	Related	Develops understanding and skill interpreting different kinds of data (qualitative and quantitative) to understand, assess, and make ethical decisions regarding complex global health problems and the programs designed to address them.
GIC 487	Global and Intercultural Studies	Globalization, Social Justice, and Human Rights	Undergraduate	Related	This course explores the theories, issues, debates, and pedagogy associated with globalization, social justice, and human rights. The course provides students with a unique opportunity to explore these topics within the classroom and, via internet and other technologies, across classrooms located around the globe. The student, through collaborative projects with peers around the world, will reflect upon how globalization shapes and transforms local communities and national cultures
GLG 111	Geology and Environmental Earth Science	The Dynamic Earth	Undergraduate	Related	Earth as a geophysical-geochemical unit and its internal and external processes. Formation of minerals and their relationships in rocks. Earth stresses and rock deformation, mountain building, and earthquakes. Geomorphic (landscape) evolution by mass wasting and wave, stream, wind, ground water, glacial, and volcanic activity.
GLG 311	Geology and Environmental Earth Science	Geoenvironmental Field Methods	Undergraduate	Related	Develops environmental geoscience field skills useful for fundamental and applied investigations. Students learn to test field hypotheses and construct professional reports and will develop a portfolio of project work.
GLG 335	Geology and Environmental Earth Science	Ice Age Earth	Undergraduate	Related	Introduces the study of climate change as recorded in the geologic record. Discusses natural and anthropogenic causes for climate change.
GLG 402	Geology and Environmental Earth Science	Geomicrobiology	Undergraduate	Related	Focuses on mutual interactions between microbial and geological processes. Topics include: role of microorganisms on mineral weathering rates, microbial mediated ore deposit formation, microbe enhanced oil recovery, life in extreme environments, search for biosignatures in geological records and meteorites and implications for life on Mars, microbial ecology in ocean floor hydrothermal vents.
GLG 417	Geology and Environmental Earth Science	Forensic Isotope Geochemistry	Undergraduate	Related	Application of stable and radiogenic isotope systems to contemporary forensic problems including environmental contamination, climate change and wildlife forensics, archaeological forensics, animal migration patterns, soil provenancing, human provenancing, food authenticity and traceability, and criminal investigations including drug use and trafficking, weapons tracing, and counterfeit detection. Analytical methods, data quality, and isotopic mapping and modeling will be discussed as a basis for quantitative and qualitative forensic diagnostics
GLG 435	Geology and Environmental Earth Science	Soils and Paleosols	Undergraduate	Related	Introduces methods of soil morphology, taxonomy, and genesis of modern and fossil soils. Describes how to use fossil soils to infer past environmental conditions.
GLG 436	Geology and Environmental Earth Science	Paleoclimatology	Undergraduate	Related	Reviews stable isotopic techniques to reconstruct climate change over geologic time scales from various types of records, including ocean sediment cores, ice cores, lakes, soils, and speleothems.
KNH 150A	Kinesiology and Health	Beginning Canoeing	Undergraduate	Related	This beginning canoeing course will focus on the essential skills and information that students need to travel safely and comfortably on flat and moving water. The course will cover history, canoe anatomy, clothing and equipment, paddling strokes and techniques, river reading/hazard identification, navigation, and minimizing environmental impact for boaters.
KNH 150M	Kinesiology and Health	Mountain Biking	Undergraduate	Related	Students will learn about mountain biking: equipment, performance, safety, its role in health promotion, environmental issues, trail development and maintenance, and building community. Students will learn how to mountain bike safely and will have opportunities to bike on a variety of mountain bike trails of different difficulty levels. Students will also participate in mountain bike trail maintenance and sustainability.
KNH 213	Kinesiology and Health	Global and Community Nutrition	Undergraduate	Related	Explores the integration of current food and nutrition research into the development of public policy with emphasis on implementation of Global and Community Nutrition programs.
KNH 214	Kinesiology and Health	Global Well-Being	Undergraduate	Related	As a result of the positive psychology movement that has gained momentum around the world, well-being is now known to be a significant factor influencing quality of life, health, and human performance. This course explores the essence of well-being and its relevance to everyday living. The course also broadens students' perspective by exploring well-being within cultural and global contexts. Students will be given multiple opportunities to examine institutional and cultural influences on individual and societal well-being as well as the global forces influencing the development and use of the human experience of well-being across the globe.
KNH 303	Kinesiology and Health	Food Systems Management	Undergraduate	Related	Organization and management of food systems: study of the functions of management including human and physical resources, food service design and layout, production and fiscal controls, computer usage and labor guidelines.
LAS 208	Latin American, Latino/a and Caribbean Studies	Introduction to Latin America	Undergraduate	Related	An interdisciplinary introduction to contemporary Latin America and the Caribbean through anthropology, art, geography, environment, film, history, literature, music, politics, sports and others.
MBI 111	Microbiology	Microorganisms and Human Disease	Undergraduate	Related	Discussion of microorganisms and human diseases they cause, with particular emphasis on the impact of these relationships on the development of human societies' past, present, and future.
MBI 361	Microbiology	Epidemiology	Undergraduate	Related	Consideration of the epidemic nature, etiology, and characteristics of infectious and organic diseases, and methods used to analyze their control within the framework of environmental and population variables.
MGT 111	Management	Introduction to Business	Undergraduate	Related	Study of relationships between business and its environment, social responsibilities of business, and business management.
CMR 111	Commerce	Introduction to Management	Undergraduate	Related	Introduction to principles and practices of managing organizations. Exposure to contemporary management issues, functions of management, and the interrelationship between business organizations and the environment. Emphasis on development of supervisory skills.
MGT 303	Management	Human Resource Management	Undergraduate	Related	Introduction to concepts, issues, and practices of modern human resource management and their impact on organizational effectiveness. Students develop a critical appreciation of the role human resource management plays in the dynamic environment in which organizations operate. Topics covered include human resource planning, recruitment, selection, training and career development, performance appraisal, compensation and benefits, employee and labor relations, and employee rights.
MGT 431	Management	Logistics Management	Undergraduate	Related	Develops a framework for understanding all the firm's movement/storage activities necessary to provide products to customers where and when they are desired. Transportation, warehousing, inventory, order-processing, and handling activities are investigated in terms of their impact on customer service and total distribution cost.

PHY 118	Physics	Introduction to Atmospheric Science	Undergraduate	Related	Introductory survey of a broad range of atmospheric phenomena with emphasis on how they can affect our lives and mankind's impact on a changing atmospheric environment. Quantitative, illustrative, and mostly non-mathematical approach to processes that pertain to such topics as composition of the atmosphere, global climate, large-scale weather systems, and the nature of violent storms. Develops skills in the areas of problem solving (using charts instead of equations) and elementary weather forecasting.
POL 345	Political Science	National Issues	Undergraduate	Related	Examination of major contemporary domestic national issues, especially pollution, health care, inflation and recession, crime, income distribution, poverty, federal budget
POL 387	Political Science	International Security Issues	Undergraduate	Related	Comparative analysis of international security issues, with emphasis on military security concerns and international peacekeeping, and nontraditional security concerns such as human security, food security and resource security.
PSY 497	Psychology	Methods of Social Justice Inquiry	Undergraduate	Related	Historical and critical overview of methods of inquiry used by scholars and activists seeking social justice, with emphasis on Participatory Action Research, Narrative Analysis, Community Psychology, Institutional Ethnography, and Mixed-methods designs. Examines methodologies of previous and current research as framed by social constructionist epistemology, interdisciplinary conceptual frameworks, cultural values, and politics of advocacy for equity and fairness. Provides mentoring in application of techniques.
SJS 165	Social Justice Studies	Introduction to Social Justice Studies	Undergraduate	Related	The Introduction to Social Justice provides a basis to understand, interpret, and solve social problems in fair, equitable, and just ways.
SOC 201	Sociology and Gerontology	Social Problems	Undergraduate	Related	Introduction to causes, context, policy, and prevention of selected social problems with particular emphasis on problems of conflict and inequality and problems of human progress. Primarily recommended for sophomores.
SOC 305	Sociology and Gerontology	Introduction to the Sociology of Globalization	Undergraduate	Related	Study of human societies in evolutionary and comparative perspective emphasizing sociocultural origins and consequences of social development. Special attention to contemporary issues in advanced industrial societies.
SOC 323	Sociology and Gerontology	Social Justice and Change	Undergraduate	Related	Study of how social justice is realized through social change, focusing on the individual and collective actions of people fighting for their vision of a just world and a just future.
ATH 505	Anthropology	Food, Taste, and Desire	Graduate	Related	Explores food consumption as a meaningful practice embedded in local, national, and global relations and in social, economic, and political contexts. Topics include history of food consumption; food and power; nation, the state, and food; gender, sexuality and consumption; consumption, marketing, and subjectivity; globalization; hunger and memory; need, taste, and desire; and food aesthetics, moralities, and poetics.
BIO 501	Biology	Plant Ecology	Graduate	Related	Studies of plant communities, populations, and individuals in relation to their environment.
BIO 525	Biology	Environmental Plant Physiology	Graduate	Related	Examines the structure and function of plants from the cellular to the whole plant level focusing on plant-environment interactions
BIO 563	Biology	Limnology	Graduate	Related	Physical, chemical, and biological characteristics of freshwater ecosystems.
GEO 506	Geography	Indigenous Peoples and Their Sacred Lands	Graduate	Related	An in depth look at topics related to policy and land management practices that impact indigenous peoples nationally, as well as internationally. The major focus of the various case studies is on designated sacred lands of Native American tribes within the United States. The course provides students with interdisciplinary training about indigenous cultures and human rights.
GEO 525	Geography	Hydrogeography	Graduate	Related	Investigation of the hydrologic cycle focusing on the surficial component parts of precipitation, infiltration, soil moisture, evaporation, transpiration, and surface runoff, and variation of these from place to place over the earth's surface.
GEO 544	Geography	GIScience Techniques in Landscape Ecology	Graduate	Related	Using geographic tools such as geographic information systems (GIS), remote sensing, global positioning system (GPS) receivers, and computer-based analysis, students will study a range of current topics in landscape ecology.
GEO 551	Geography	Urban and Regional Planning	Graduate	Related	Introduction to the purposes and possibilities of urban and regional planning. Topics include historical development and theoretical rationale of planning, analytical techniques, and policy and design strategies for addressing urban problems. Surveys contemporary urban issues and areas of planning specialization. Prepares students with fundamental concepts and skills for careers in urban planning and development.
GEO 554	Geography	Urban Geography	Graduate	Related	Geographic principles related to the distribution, function, structure, and regional settings of urban centers.
GEO 575	Geography	Global Periphery's Urbanization	Graduate	Related	Countries of the Third World have experienced an unprecedented rate of urban growth and expansion since the middle of this century. As Third World countries continue to industrialize, urbanization and related problems will increasingly become important and will continue to be on the agendas of national governments, international agencies, planners, and academics well into the next century. Explores Third World (Africa, Asia, and Latin America) urbanization literature from an interdisciplinary perspective.
GLG 502	Geology and Environmental Earth Science	Geomicrobiology	Graduate	Related	Focuses on mutual interactions between microbial and geological processes. Topics include: role of microorganisms on mineral weathering rates, microbial mediated ore deposit formation, microbe enhanced oil recovery, life in extreme environments, search for biosignatures in geological records and meteorites and implications for life on Mars, microbial ecology in ocean floor hydrothermal vents.
GLG 517	Geology and Environmental Earth Science	Forensic Isotope Geochemistry	Graduate	Related	Application of stable and radiogenic isotope systems to contemporary forensic problems including environmental contamination, climate change and wildlife forensics, archaeological forensics, animal migration patterns, soil provenancing, human provenancing, food authenticity and traceability, and criminal investigations including drug use and trafficking, weapons tracing, and counterfeit detection. Analytical methods, data quality, and isotopic mapping and modeling will be discussed as a basis for quantitative and qualitative forensic diagnostics.
GLG 535	Geology and Environmental Earth Science	Soils and Paleosols	Graduate	Related	Introduces methods of soil morphology, taxonomy, and genesis of modern and fossil soils. Describes how to use fossil soils to infer past environmental conditions.
GLG 536	Geology and Environmental Earth Science	Paleoclimatology	Graduate	Related	Reviews stable isotopic techniques to reconstruct climate change over geologic time scales from various types of records, including ocean sediment cores, ice cores, lakes, soils, and speleothems.
MGT 531	Management	Logistics Management	Graduate	Related	Develops a framework for understanding all the firm's movement/storage activities necessary to provide products to customers where and when they are desired. Transportation, warehousing, inventory, order-processing, and handling activities are investigated in terms of their impact on customer service and total distribution cost.
PSY 597	Psychology	Methods of Social Justice Inquiry	Graduate	Related	Historical and critical overview of methods of inquiry used by scholars and activists seeking social justice, with emphasis on Participatory Action Research, Narrative Analysis, Community Psychology, Institutional Ethnography, and Mixed-methods designs. Examines methodologies of previous and current research as framed by social constructionist epistemology, interdisciplinary conceptual frameworks, cultural values, and politics of advocacy for equity and fairness. Provides mentoring in application of techniques.