

Sustainability Focused Courses Offered at OSU
Based on survey conducted Spring 2014

Sustainability focused courses (N=49)

Course #	Course Title	Course Description
AGEC 2303	Food Marketing to a Diverse Population	Sustainable food marketing methods to an ethnically and culturally diverse population in the U.S. Real life issues of marketing to a diverse population, including Native, Asian, African, and Hispanic Americans, and low-income populations
AGEC 5783	Bio-Energy Economics and Sustainability	Economic issues related to supply chains producing bio-energy and bio-based products. Economic, sustainability and social dimensions of these industries. Triple bottom line objectives, life cycle analysis and the principles of feasibility analysis.
AGIN 5353	Case Studies in International Agricultural Trade	Case Studies in International Agriculture Trade and Development, dealing with sustainable global issues. Development of an understanding of issues facing policy makers, producers, consumers, and other groups in examining the costs and benefits of various international marketing, trade and development programs.
ARCH 4233	Sustainability Issues in Architecture	Sustainability topics and their application to architecture.
BIOL 3034	General Ecology	Physical and biotic environment, responses of organisms to the environment, behavioral and community ecology, natural ecosystems and man's interaction with ecosystems. Topics related to sustainability include nutrient regeneration, global warming, habitat loss, sustainable agriculture, biodiversity, and pollution.
BAE 4400	Special Problems	Special problems courses that focus on Life Cycle Assessment and sustainability.
BAE 5243	Biological Conversion for Advanced Biofuels	Fundamental principles and applications of converting biomass to advanced biofuels. Focus will be on biological processes, fermentor design and operation, product recovery and emerging fuels. Looks at Life Cycle Assessment and sustainability.
CIVE 4143	Environmental Engineering Design	Factors involved in the design of engineered environmental systems. Solving "real world" environmental engineering problems. Design experience using decision-making techniques, integrating and expanding upon current knowledge, and defending decisions made. Economic, environmental, social, and regulatory aspects of environmental engineering design.
CIVE 6923	Industrial Wastes Engineering	Theory and methods of waste minimization, waste product reduction or reuse; process changes and treatment of residuals to reduce volume and toxicity of industrial wastes.

DHM 4573	Sustainable Design for Apparel and Interiors	A brief review of contemporary environmental, social and economic issues associated with industry practice; a broad exploration of sustainable design theories which may be applied in the apparel and interiors fields, from eco-efficiency to socially-driven changes.
ECON 5013	Contemporary Environmental Policy	Economic, social and political factors that influence the formation and implementation of environmental policy. Environmental policy instruments (including pollution taxes, standards and marketable pollution permits), measurement of environmental damages and risk. Risk comparison, regulatory issues, health risk assessment, and risk communication. Political-economic considerations.
ECEN 3113	Energy, Environment and Economics	Topics relevant to understanding the close relationship between energy use, its impact on the environment, and overall economic implications. Green energy technologies (wind, solar, hydro) will be considered along with conventional techniques. Both conventional and non-conventional energy technologies will be discussed.
ETM 5481	Sustainable Enterprise Strategies	The principles of sustainability in the context of industrial enterprises. The implications of sustainability in design of products, industrial systems and infrastructure. The importance of life cycle cost analysis as a key engineering economy tool.
ENTO 3331	Insect Pests of Agronomic Crops	A survey of important arthropods or agronomic crops commonly grown in Oklahoma. Coverage includes identification of pests and beneficial insects, recognition of damage symptoms, discussion of sampling strategies and decision-making processes for management, and integrated pest management tactics.
ENTO 3663/PLP 3663	Turfgrass Integrated Pest Management	The biology, ecology, and identification of fungal, nematode, and insect turfgrass pests. Contemporary concepts and applications of integrated control practices available for managing turfgrass pests along with decision-making tools for use in turfgrass pest management programs.
ENTO 5524/PLP 5524	Integrated Management of Insect Pests and Pathogens	Modern theory and practices for management of insect pests and pathogens in plant production systems, emphasizing an ecologically-based, integrated approach. Basic concepts of pest management, decision-making, cost/benefit analysis and risk/benefit analysis.
ENTO 5513	Biological Control	The ecological principles and applied practices of biological control of insects, weeds and plant pathogens. Epizootiology including the scientific basis of biological control; natural enemies and their biology; biological control methods; and biological control in integrated pest management programs.
ENVR 1113	Elements of Environmental Science	Application of biology, chemistry, ecology, economics, geology, hydrology, mathematics, physics & other ag. sciences to environmental issues. Addressing env. problems from the standpoint of ethics, risk, and scientific & social feasibility. Emphasis on ag. systems & natural resources.

ENVR 5303	Issues in Environmental Sustainability	The course reviews human-nature relationships and how they affect the ability of future generations to sustainably improve their quality of life. The course also considers methods of environmental stewardship that can contribute to sustainability. In-class and/or online discussions of issues, guest presentations by outside experts, and reports on selected topics are included.
ENVR 5503	Environmental Management Practicum	This course explores methods of analyzing sustainable solutions to complex environmental, safety and health problems using an integrated team approach. This approach combines technical, legal, economic, and sociopolitical information into a coherent analytical framework.
ENVR 6503	Advanced Environmental Management Practicum	This course discusses and compares advanced methods of analyzing sustainable solutions to complex environmental, safety and health problems. A framework for integrating technical, legal, economic, and sociopolitical analysis into a risk-based model will be developed and applied to a real-world case study.
GEOG 3023	Climatology	Characteristics and distribution of world's climate. Patterns and associations of temperature, precipitation, pressure and winds. Regional climates of Earth. Topics of focus include climate physics, regions, climate and biosphere, and climate change.
GEOG 3063	Economic Meteorology	Economic impact of weather ranging from consumer spending to agriculture and energy commodity markets. Specific weather events, and their associated economic impact, weather and climate forecasting and methods for eliminating weather risk.
GEOG 4073/5073	Climate Change: Past, Present, and Future	Aims at understanding and discussing the mechanisms of global climate change and how they have functioned in our past, in the recent decades and how scientists predict possible changes in the near and distant future. Meets with 5073. No credit for students with credit in 5073.
HORT 4543	Sustainable Nursery Production	Sustainable commercial production of field- and container-grown woody ornamental crops.
HORT 4933	Principles of Sustainable and Organic Horticulture	Principles and practices of sustainable, organic, and alternative horticultural management systems. Offered through web-based instruction.
HORT 4973	Sustainable Landscape Management	The ecological principles and landscape resources supporting decision-making for sustainable landscape management. Retrofits of existing development for enhanced sustainability, including equipment selection, stormwater management, use of successional landscapes, permaculture, and organic methods. Offered through web-based instruction.
HRAD 3643	Geotourism	A unique tourism destination will be examined and evaluated in depth related to the authenticity of its environment, culture, aesthetics, and heritage emphasized through specific geotourism practices.

IEM-4953/5953	Industrial Assessment	Plant assessment and improvement-based concepts, strategies, and tools for manufacturing operations. Issues include energy, water, waste, quality, and productivity analysis across the organization from a systems perspective. Energy conservation in small to medium-sized manufacturing clients, actual field experience includes the states of Oklahoma, Kansas, Arkansas, and North/Northwest Texas.
LA 2523	Garden Design in Harmony with Local Ecology	History, theory, and practice of creating gardens in harmony with local ecology to express aesthetic and cultural values of individuals and societies. Environmental aspects of place related to design form and expression.
LA 4112	Landscape Architecture National Built Works	Examine issues of the design/build environment, sustainable strategies for land use and rehabilitation, and professional practice while exploring career opportunities for students. Expose students to built works, including sustainably-developed sites, and landscape architectural professional offices with targeted practices and market niches. Includes 4-6 day out-of-state field trip component.
LA 4423	Planning and Design for Sustainable Landscapes	Explore the origins of sustainability as a basis for understanding how to improve the planning and design of natural and cultural environments in the practice of landscape architecture.
LA 4425	Studio 4: Ecological Planning and Community Design	Environmental assessment/analysis as related to ecological planning and community design. Applied project will focus on new urbanism and community design solutions while addressing environmental and sustainability issues.
LA 4525	Studio 6: Collaborative Design	Exploration of the dynamics of design teams, professional office environments, and community involvement. This capstone course will apply collaborative comprehensive solutions to community based projects while addressing environmental, social, and economic dynamics.
MGMT 3011	Business, Government and Society	Students will be exposed to topics in business sustainability including ethics and corporate responsibility; social environment and stakeholders; natural environment and externalities; and the regulatory environment.
MGMT 3023/MGMT 5023	Management of Sustainable Enterprises	Students will be introduced to the social and natural environments and threats to sustainability. The course will cover the external drivers of sustainability as well as internal responses to these pressures.
NREM 2013	Ecology of Natural Resources	Introductory focus on understanding and applying general ecological principles to agricultural and natural ecosystems. Emphasis on relationships between climate, soils, agricultural, and natural ecosystems. Topics include nutrient cycles, energy flow, species interactions, biological diversity, productivity, sustainability, and landscape and ecosystem management.

NREM 3013	Applied Ecology and Conservation	Development of critical thinking for conservation and land management through the application of ecological concepts and theory. Principles of population, community, ecosystem and landscape ecology, with applications to management of wildlife, fisheries, forest and rangeland resources. Application of scientific method and literature to natural resource ecology and management.
NREM 3103	Natural Resource Field Studies	Three-week summer pre-session field experience at an off-campus site. Field study, analysis, and assessment of natural resource ecosystems at multiple scales with application to integrated management of forest, wildlife, range, water, soil, and recreation resources to sustain a broad array of uses and values, and to understand associated ecological, social, policy, and ethical issues. Includes visitations to private and public natural resource lands and projects.
NREM 4093	Natural Resources, People and Sustainable Development	Relationship between people, the land, and associated natural resources in the developing world, including the ecological and cultural basis for resource use and development. Examines issues of traditional agriculture and deforestation, and explores sustainable strategies for land use, resource management, and community development. Includes two-week study abroad component.
NREM 4333	Forest Resource Management: Planning and Decision-Making	Integrated problem solving, to apply biological, quantitative, economic, political, and administrative principles in solving forest resource management problems.
NREM 4424	Fisheries Management	Research techniques and methodology in fisheries science, including sampling design, habitat measurements, sampling gears and abundance estimation, age and growth analysis, recreational surveys, data analysis, and report writing. How to establish sustainable harvest regulations for fisheries.
NSCI 5963	Environmental Scanning and Analysis	Discussion of changes in the economic, social, ethical, political, legal, technological, and ecological environments in which dietitians practice. Implications of these changes for education, practice and research within the field with emphasis on the healthcare industry. Web-based instruction.
PLNT 4673	Cropland Ecosystems	Designing sustainable cropping systems that optimize yield potential, economic and environmental benefit based upon climatic and social conditions.
RMTR 3010	Leave No Trace	Specialized course that focus on minimal behavioral impacts in the backcountry to sustain parks and outdoor spaces for future generations.
SOC 5493	Seminar in Environmental Justice	Considers racial, class & equity implications of env. degradation and regulation. Includes discussion of controversies over the siting of hazardous facilities in urban and rural areas, the extraction of resources from native lands, national and transnational export of toxic waste to the South and the development of a distinct environmental justice movement.

SOC 6463	International Issues in Environmental Sociology	Advanced study of the international context of environmental issues. Particular emphasis is placed upon the international institutional contexts that enable and constrain the achievement of sustainable development.
SOIL 3883	Sustainable Agriculture Concepts and Practice	Principles of sustainable agriculture for improved farm management. Analysis of farming systems for indicators of sustainability.
SOIL 4463	Soil and Water Conservation	Assessment of the importance, quality and quantity of soil and water as natural resources for ecosystems and societies. Principles of soil erosion processes and management practices to decrease erosion in urban, cropland and rangeland systems. Understand the principles of hydrology cycle to improve water use efficiency of precipitation and irrigation resources. Examine resource mismanagement that have resulted in desertification, salinization and deforestation.