

Department	Course Number	Course Name	Description of Course	Learning Outcomes	U/G	Focused/Related
Biological Sciences	BOT 3015	Plant Biology	This course is an introduction to evolutionary relationships, natural history, ecological adaptations, and physiology of plants, fungi, autotrophic protista, and prokaryotes.		U	R
Biological Sciences	BOT 3015L	Plant Biology Lab			U	R
Biological Sciences	BOT 3143C	Field Botany	This course is an introduction to plant taxonomy with emphasis on laboratory and field study. Orientation to principles of identification, classification, and rules of botanical nomenclature. Ecology, Taxonomy, Natural Resource Management	Aptitude in Ecology, Taxonomy, Natural Resource Management	U	R
Biological Sciences	BOT 4394	Plant Molecular Biology	This course explores molecular biology and biotechnology of plant growth and development.		U	R
Biological Sciences	BOT 5938r	Selected Topics in Botany			U	R
Biological Sciences	BSC 1005	General Biology for Non-majors	This course consists of four selected topics in contemporary biology.		U	R
Biological Sciences	BSC 1005L	General Biology Lab			U	R
Biological Sciences	BSC 2010	Biological Science I	This course introduces basic chemistry, energetics, metabolism, and cellular organization; molecular genetics and information flow; animal and plant function.		U	R
Biological Sciences	BSC 2010L	Biological Science I Lab	This laboratory furnishes tools and techniques used to visualize, quantify, and analyze biological phenomena, including experimental design and execution, recording of data, and graphic and statistical analysis of data.		U	R
Biological Sciences	BSC 2011	Biological Science II	This course focuses on reproduction and development, transmission (Mendelian) genetics, population biology, ecology, and evolution.		U	R
Biological Sciences	BSC 2011L	Biological Science II Lab	This lab is an introduction to animals, sponges, cnidarians, flatworms and pseudocoelomates, annelids, mollusks, arthropods, echinoderms, and chordates.		U	R

Biological Sciences	BSC 3052	Conservation Biology	This course focuses on the history of the conservation movement, the research on populations of animals and plants that is relevant to man's impact upon the environment, pollution in terrestrial and aquatic ecosystems, endangered species, government regulation, and sustainable development. Ecology and evolution behind conservation and management of biological diversity.	understanding of science, critical thinking, reading science, writing, experimental design	U	R
Biological Sciences	BSC 3312	Marine Biology	This course explores marine geology, chemistry of the oceans, oceanic circulation, oceanographic techniques, the marine environment and marine life.		U	R
Biological Sciences	BSC 3402L	Experimental Biology Lab	This course explores methodology of biological experimentation, data analysis, and reporting using selected topics (see academic advising office for selected topics offered each semester).		U	R
Biological Sciences	BSC 3930	Seminar in Biological Frontiers	This course is a weekly seminar covering topics in biological research. Not repeatable for credit toward major requirements.		U	R
Biological Sciences	BSC 3938	Careers in the Biological Sciences	This course is intended for biology sciences majors at any point in their undergraduate career, but is most beneficial to those in their first three years. Career options in biology-related fields (including health professions) and the preparation they require are presented for students planning to immediately enter the job market or to continue their academic careers upon graduation. Not repeatable for credit toward major requirements.		U	R

Biological Sciences	BSC 4933	Biogeography	This course will cover the full range of biogeography with an emphasis on ecological and evolutionary biogeography, the processes that help determine distributions, and the analytical methods used to describe distributions and test processes. Topics include the physical environment (geology, meteorology), the distribution of ecosystems and biomes across the globe, speciation, common geographic patterns, diversity gradients, island biogeography, and historical (evolutionary) biogeography. There is a laboratory section as part of this course in which student working in groups will analyze geographic data sets to search for patterns and test hypotheses with the scientific method.		U	R
Biological Sciences	BSC 4933-3	Tropical Marine Ecology	Introduction to tropical marine environments and the organisms that inhabit them as well as threats they face on local and global scales.	An understanding of the ecology of tropical marine habitats, their interconnectivity, and the roles they play in overall ecosystem health.	U	R
Biological Sciences	BSC 4933-4	Biology of Elasmobranch Fishes	Introduction to the Evolution, diversity and biology of elasmobranch fishes with a focus on fishery and conservation issues.	An understanding of the biology of sharks and their relatives and the fisheries management and conservations challenges that are unique to these taxa.	U	R
Biological Sciences	BSC 4933L	Ecology Lab	Students will be introduced to common questions and methods from basic and applied ecology using both lab and field exercises. These include quantifying effects of density, competition, and predation on populations, understanding food webs and trophic interactions, as well as the biogeography of movement and species ranges, succession in long-leaf pine forests, local stream biomonitoring, and foraging ecology.		U	R
Biological Sciences	BSC 4937	Seminar in Living Marine Resource Ecology	This seminar course in marine resource ecology designed to introduce students to a broad array of current research priorities and interests in marine ecology. Students have the opportunity to meet with resource managers and scientists from both the biological and social fields. Lecture topics range from life history studies of marine fish to the economic consequence of marine policy.		U	R

Biological Sciences	IFS 3044	Honors E-series: Living Green - Theory to action	<p>Living Green: Theory to Action - The world you will enter when you graduate offers the highest standard of living ever known to humans. However, most natural resource-based systems on the planet, from food production and industrial processing to waste and energy management, are depleting natural resources, creating conditions that cause social unrest, and endangering life – human and other – at a rapid pace. The challenge we now face is one of rethinking, re-imagining, and recreating processes that depend less on nonrenewable resources, do not consume renewable resources at non-sustainable rates, and do not cause harm to living beings on the earth. In this seminar, we will consider our responses to these challenges. Most students probably will enter the course with some knowledge of global environmental degradation - what fills our landfills, water quality, global warming, rainforest defoliation. The class will expand beyond such environmental issues to understanding the three "E"s of sustainability - ecology, equity, and equality - and to considering ways to integrate sustainability into building techniques, infrastructural details, and social structures. We will discuss solutions that you can apply to your daily life, and practice skills to help you begin to make personal and professional decisions that support living a sustainable life. The course is intended for students with diverse backgrounds and interests. The goal is not to persuade you to recycle, but to help prepare you for both a sustainable life and life-work. You are all welcome to the class, and you are all needed to do this important work.</p>	<p>At the end of this course, students will be able to: - understand global challenges to sustainability from economic, environmental and social perspectives - understand how science interacts with culture, society, economics, and politics to affect the environment - discern alternatives to current practices that impact long-term sustainability - evaluate the impact of personal decisions on local, regional, national and global sustainability - evaluate the impact of personal decisions on the environment and personal life goals - develop decision-making tools to move toward fulfillment of personal life goals - implement personal behaviors consistent with personal life goals - critically analyze a major problem at both the global and local levels - assess and make recommendations for the application of sustainable practices to institutions with power - speak and write effectively about issues of sustainability, and practice working effectively in a group</p>	U	F
Biological Sciences	ISC 2937	Ecology of Food	Honors seminar in ecology and evolution behind food production	understanding of science and agriculture, reading science, critical thinking, writing, proposal formulation	U	R

Biological Sciences	PCB 3043	General Ecology	This course focuses on topics such as: population biology; population growth; community processes, succession, nutrient cycling, and energy flow; species interactions; ecological efficiency; and biogeographical ecology.		U	R
Biological Sciences	PCB 3043L	Lab for Ecology			U	R
Biological Sciences	PCB 5425	Population Ecology			G	R
Biological Sciences	PCB 5447	Community Ecology			G	R
Biological Sciences	PCB 5938r	Selected Topics in Ecology and Evolutionary Biology			G	R
Biological Sciences	ZOO 4454	Biology of Fishes	Introduction to the evolution, diversity, biology, ecology, and management of fishes	A greater understanding of fish biology and of the diversity and ecology of Florida freshwater and marine fishes.	U	R
Biological Sciences	ZOO 5932r	Selected Topics in Marine Biology			G	R
Chemical & Biomedical Engineering	ECH 3101	Chemical Engineering Thermodynamics	thermodynamic analysis of processes involving multicomponent, multiphase systems	ability to analyze energy usage of processes	U	R
Chemical & Biomedical Engineering	ECH 3418	Separation Processes	selection and analysis of techniques for chemical separation	ability to choose separation processes that are most economical	U	R
Chemical & Biomedical Engineering	ECH 4781	Chemical Engineering-Environmental	This course is an introduction to applications of environmental engineering from a chemical engineering perspective. Thermodynamics, stoichiometry, chemical kinetics, transport phenomena, and physical chemistry are utilized in addressing pollution control and prevention processes. Analysis of particle phenomena, including aerosols and colloids. Applications of fundamentals to analyze gas and liquid waste treatment processes.		U	R

Chemistry	CHM 4080	Environmental Chemistry I	This course focuses on the application of geologic and geochemical principles to environmental issues. Topics include: an evaluation of contaminants in surface and ground water; hydrocarbon geochemistry and petroleum contamination; waste management, including solid, toxic and nuclear waste; air quality issues, including radon and asbestos; geologic hazards in upland and coastal areas; environmental methods and instrumentation, quality assurance and quality control in environmental analysis; principles of toxicology; risk assessment and risk management.		U	R
Chemistry	CHM 4081	Environmental Chemistry II	This course studies the organic geochemistry of natural waters and sediments. It offers an overview of the sources of organic matter in aquatic systems, the important reactions and transport mechanisms that control the biochemical cycling of organic carbon in these systems, and the impact of naturally-occurring organic carbon on environmental and ecological processes. Attention is also devoted to anthropogenic (xenobiotic) organic molecules. It also discusses how analytical techniques such as ¹³ C NMR, mass spectroscopy, and capillary electrophoresis provide useful organic biogeochemical information.		U	R
Chemistry	CHM 5086	Environmental Chemistry I	This course focuses on the application of geologic and geochemical principles to environmental issues. Topics include: an evaluation of contaminants in surface and ground water; hydrocarbon geochemistry and petroleum contamination; waste management, including solid, toxic and nuclear waste; air quality issues, including radon and asbestos; geologic hazards in upland and coastal areas; environmental methods and instrumentation, quality assurance and quality control in environmental analysis; principles of toxicology; risk assessment and risk management.		G	R

Chemistry	CHM 5087	Environmental Chemistry II	This course studies the organic geochemistry of natural waters and sediments. It offers an overview of the sources of organic matter in aquatic systems, the important reactions and transport mechanisms that control the biochemical cycling of organic carbon in these systems, and the impact of naturally-occurring organic carbon on environmental and ecological processes. Attention is also devoted to anthropogenic (xenobiotic) organic molecules. It also discusses how analytical techniques such as ¹³ C NMR, mass spectroscopy, and capillary electrophoresis provide useful organic biogeochemical information.		G	R
Civil & Environmental Engineering	CCE 3101	Construction Materials	This course covers properties and characteristics of construction materials for civil and highway engineering; metals, aggregates, cements, timber, concrete, and asphalt.		U	R
Civil & Environmental Engineering	CCE 5212	Sustainable & Green Construction			G	F
Civil & Environmental Engineering	CEG 3011	Soil Mechanics	This course covers physical, index, hydraulic and mechanical properties of soils. Topics include classification, compaction, stress distribution, permeability and seepage, consolidation settlement, and shear strength of soil.		U	R
Civil & Environmental Engineering	CEG 4701	Environmental Geotechnics	This course covers the geotechnical aspects of waste containment and storage. Aspects of design, construction, and performance of earthen structures for storing or disposing waste of remediation contaminated sites.		U	R
Civil & Environmental Engineering	CEG 4801	Geotechnical Design	This course covers geotechnical investigation, analysis, and design of different geotechnical structures, including earth retaining structures, slopes and embankments, earthwork with geosynthetics, as well as shallow foundations.		U	R
Civil & Environmental Engineering	CEG 5015	Advanced Soil Mechanics			G	R

Civil & Environmental Engineering	CEG 5705	Environmental Geotechnics	This course covers the geotechnical aspects of waste containment and storage. Aspects of design, construction, and performance of earthen structures for storing or disposing waste of remediation contaminated sites.		G	R
Civil & Environmental Engineering	CWR 3200L	Environmental and Hydraulic Engineering Lab	This course is a hands-on introduction to environmental and hydraulic engineering topics. Physical experiments that demonstrate fundamental concepts such as hydrostatics, pipe flow, open channel flow, water quality, and water treatment processes are performed.		U	R
Civil & Environmental Engineering	CWR 3201	Hydraulics	This course covers fundamental concepts of fluid properties, hydrostatics, kinematics, ideal flow viscous effects, transport phenomena; drag, laminar, and turbulent flow in pipes and channels; and dimensional analysis.		U	R
Civil & Environmental Engineering	CWR 4101	Engineering Hydrology	This course covers the processes of the hydrologic cycle, hydrologic analyses for the planning and design of water management systems, and the use of application program packages.		U	R
Civil & Environmental Engineering	CWR 4102	Groundwater Hydrology	This course examines the fundamentals of groundwater flow and contaminant transport. Topics include Darcy's law, flow nets, mass conservation, heterogeneity and anisotropy, storage properties, 3-D equation of groundwater flow, regional circulation, unsaturated flow, recharge, stream-aquifer interaction, well hydraulics, slug test analyses, and contaminant transport processes.		U	R
Civil & Environmental Engineering	CWR 4202	Hydraulic Engineering I	This course covers principles of hydrology and hydraulics as they apply to the design of water supply, urban drainage, flood control, and hydraulic energy-conversion systems. Students use computer-aided design to devise hydraulics systems.		U	R

Civil & Environmental Engineering	CWR 4203	Hydraulic Engineering II	This course covers methods for analyzing a broad range of unsteady flow conditions and for designing facilities to cope with resulting problems. Based on these methods, students learn to apply computer programs to practical water distribution and open-channel systems.		U	R
Civil & Environmental Engineering	CWR 4540	Water Resources Engineering	This course offers a systems approach to complex water resources problems as well as a systems analysis of water resources operations, design, and planning.		U	R
Civil & Environmental Engineering	CWR 4822	Coastal and Estuarine Hydraulics	This course covers coastal hydraulic principles and waves in estuaries and coastal oceans, wave properties and wave forces on coastal structures, tidal motions, mixing and transport in estuaries, and coastal -engineering analysis.		U	R
Civil & Environmental Engineering	CWR 5125	Groundwater Hydrology	This course examines the fundamentals of groundwater flow and contaminant transport. Topics include Darcy's law, flow nets, mass conservation, heterogeneity and anisotropy, storage properties, 3-D equation of groundwater flow, regional circulation, unsaturated flow, recharge, stream-aquifer interaction, well hydraulics, slug test analyses, and contaminant transport processes.		G	R
Civil & Environmental Engineering	CWR 5305	Urban Stormwater Runoff			G	R
Civil & Environmental Engineering	CWR 5635	Water Resources Planning and Management			G	R
Civil & Environmental Engineering	CWR 5824	Coastal and Estuarine Hydraulics	This course covers coastal hydraulic principles and waves in estuaries and coastal oceans, wave properties and wave forces on coastal structures, tidal motions, mixing and transport in estuaries, and coastal -engineering analysis.		G	R

Civil & Environmental Engineering	EES 3040	Introduction to Environmental Engineering	This course is a broad introduction to environmental engineering topics. Includes fundamental concepts in mass balance, water quality, water and wastewater treatment, air quality, and solid/hazardous waste management, with considerations to environmental and societal impacts, as well as technical limitations. This course serves as the foundation for all other environmental engineering courses.		U	F
Civil & Environmental Engineering	ENV 4001	Environmental Engineering	This course covers the design of water and wastewater treatment plants, wastewater collection systems, air and water pollution control, as well as solid waste management and contemporary environmental issues.		U	R
Civil & Environmental Engineering	ENV 4002	Remediation Engineering	This course reviews various innovative remediation technologies used for cleanup of contaminated soil and groundwater at a site such as air sparging, soil vapor extraction, reactive walls, reactive zones, stabilization technologies, as well as hydraulic and pneumatic fracturing pump-and-treat systems.		U	R
Civil & Environmental Engineering	ENV 4031	Applied Environmental Engineering Microbiology	This course surveys environmentally important microbes and their roles in the environmental restoration processes. Major topics include basics of microbiology, stoichiometry and bacterial energetics; bioremediation and other environmental microbiology applications; as well as detoxification of hazardous chemicals.		U	R
Civil & Environmental Engineering	ENV 4041	Environmental Systems Analysis	This course covers systems analysis techniques applied to the solution of environmental problems, with particular emphasis on linear and dynamic programming.		U	R
Civil & Environmental Engineering	ENV 4053	Chemical Fate and Transport in the Environment	This course covers the processes of pollutant transport and transformation in and between air, water, and soil or sediments. Topics include advection, dispersion, diffusion, sorption, degradation, and phase-change processes.		U	R

Civil & Environmental Engineering	ENV 4341	Solid and Hazardous Waste Engineering	This course covers definitions and characteristics of solid and hazardous wastes. Topics include history, growth, and magnitude of the problem; legislative, regulatory, and technical aspects of waste generation, storage, collection, transportation, processing, transformation, and disposal; design of waste minimization and recycling programs; and case studies of waste management.		U	R
Civil & Environmental Engineering	ENV 4405	Water Reuse Engineering	This course covers sources of water for reuse, treatment processes and systems, monitoring and control instrumentation, health and social aspects, and design of facilities/systems.		U	R
Civil & Environmental Engineering	ENV 4417	Applied Environmental Engineering Chemistry	This course covers applications of fundamental principles from general, organic and biological chemistry, to major environmental engineering processes. Emphasis is placed on the chemistry of water treatment.		U	R
Civil & Environmental Engineering	ENV 4500	Environmental Unit Processes and Operations	This course covers the operational and design features of the physical, chemical, thermal, and biological treatments used in engineering for water and wastewater treatment and the management of solid and hazardous waste.		U	R
Civil & Environmental Engineering	ENV 4561	Design of Water Quality Management Facilities	This course covers analysis of operations, processes, and systems used in the design of facilities for maintaining water supply quality, wastewater control, and aquatic pollution control. Design of small and decentralized wastewater management systems.		U	R
Civil & Environmental Engineering	ENV 4611	Environmental Impact Analysis	This course covers topics such as analysis of various measures of environmental quality, impact of human activity on water, land, and air resources, and benefit-cost analysis in environmental-impact assessment.		U	F

Civil & Environmental Engineering	ENV 5028	Remediation Engineering	This course reviews various innovative remediation technologies used for cleanup of contaminated soil and groundwater at a site such as air sparging, soil vapor extraction, reactive walls, reactive zones, stabilization technologies, as well as hydraulic and pneumatic fracturing pump-and-treat systems.		G	R
Civil & Environmental Engineering	ENV 5030	Applied Environmental Engineering Microbiology	This course surveys environmentally important microbes and their roles in the environmental restoration processes. Major topics include basics of microbiology, stoichiometry and bacterial energetics; bioremediation and other environmental microbiology applications; as well as detoxification of hazardous chemicals.		G	R
Civil & Environmental Engineering	ENV 5045	Environmental Systems Analysis	This course covers systems analysis techniques applied to the solution of environmental problems, with particular emphasis on linear and dynamic programming.		G	R
Civil & Environmental Engineering	ENV 5055	Chemical Fate and Transport in the Environment	This course covers the processes of pollutant transport and transformation in and between air, water, and soil or sediments. Topics include advection, dispersion, diffusion, sorption, degradation, and phase-change processes.		G	R
Civil & Environmental Engineering	ENV 5105	Air Pollution Control			G	R
Civil & Environmental Engineering	ENV 5407	Water Reuse Engineering	This course covers sources of water for reuse, treatment processes and systems, monitoring and control instrumentation, health and social aspects, and design of facilities/systems.		G	R
Civil & Environmental Engineering	ENV 5419	Applied Environmental Engineering Chemistry	This course covers applications of fundamental principles from general, organic and biological chemistry, to major environmental engineering processes. Emphasis is placed on the chemistry of water treatment.		G	R
Civil & Environmental Engineering	ENV 5504	Environmental Engineering Processes and Operations			G	R

Civil & Environmental Engineering	ENV 5565	Design of Water Quality Management Facilities	This course covers analysis of operations, processes, and systems used in the design of facilities for maintaining water supply quality, wastewater control, and aquatic pollution control. Design of small and decentralized wastewater management systems.		G	R
Civil & Environmental Engineering	ENV 5615	Environmental Impact Analysis	This course covers topics such as analysis of various measures of environmental quality, impact of human activity on water, land, and air resources, and benefit-cost analysis in environmental-impact assessment.		G	F
Civil & Environmental Engineering	ENV 5617	Environmental Engineering Sustainability			G	F
Civil & Environmental Engineering	TTE 3004	Transportation Engineering	This course is an introductory study of transportation engineering in the United States with special emphasis on highway and traffic engineering, planning and design, construction, operation, management, and safety.		U	R
Communication	COM 4560	Social Marketing	Focuses on how to promote healthy, pro-social, or pro-environmental behaviors	Learn how to conduct research and use theory in order to create a plan to promote healthy, pro-social, or pro-environmental behaviors among a relevant group of people	U	R
Communication	MMC 6469	Diffusion of Innovation	Addresses the use of information and communication technologies for social change, including environmental communication.	propose a programmatic or research initiative to address a social need	G	F
Communications	COM 3420	Media, Culture, and the Environment	This course examines the role of language and representation in our understanding of the natural world. The course examines news media coverage of environmental issues, environmental images in popular culture, as well as the communication strategies of environmental organizations.		U	F
Communications	COM 5426	Media, Culture, and the Environment	This course examines the role of language and representation in our understanding of the natural world. The course examines news media coverage of environmental issues, environmental images in popular culture, as well as the communication strategies of environmental organizations.		G	F

Communications	MMC 4300	Communication and Change: The Diffusion of Innovations	This course is an analysis of the process of change in developing countries, particularly from the standpoint of how communication is used in the introduction, spread, and adoption of new ideas.		U	F
Computer Science	CDA 5155	Computer Architecture	see http://www.cs.fsu.edu/~whalley/cda5155.html (we also cover issues related to power and energy)	see http://www.cs.fsu.edu/~whalley/cda5155.html	G	R
Economics	ECO 3933	Special Topics in Economics	This course explores special topics of current interest or of benefit from specialties of visiting faculty.		U	R
Economics	ECP 3113	Economics of Population	This course examines determinants and consequences of world population growth and changes, components of population growth in more- and less-developed countries, population and food supply, nonrenewable resource interrelationships.		U	F
Economics	ECP 3302	Economics of Natural Resources, Energy, and the Environment	This course focuses on the relationship between natural resource availability and growth, capital theory, economics of the environment, the U.S. energy problem and alternatives for the future, an economic appraisal of U.S. energy policy.		U	F
Economics	ECP 4312	The Economics of Energy, the Environment, and Sustainability	This course explores the idea that in addressing public policy issues involving sustainability of the environment and energy systems, engineering is important for obvious reasons, but without consideration of the human factor, engineering solutions will be incomplete. In the course, students are educated on economic models and analysis of sustainability in energy and environmental systems. The frontier of addressing public policy issues involving the sustainability of the environment and energy systems requires a combination of both engineering and social science skills. Engineering is important for obvious reasons; however, without consideration of the human factor, engineering solutions alone will be incomplete at best and failures at worst.	Therefore, my goal is to educate students on the important influences of human behavior in any energy or environmental system. This will reveal important obstacles, tradeoffs, and unintended consequences to improvement of our natural world.	U	F

Economics	ECP 5115	Seminar in the Economics of Population			G	F
Economics	ECS 4013	Economics of Development	This course presents economic development as a process, description and analysis; alternative overall theories of development; particular problems and policy responses to them; strategic choices in development policy. Main focus on third world economies.		U	F
Electrical & Computer Engineering	EEL 5930	Integration of Distributed Generation	Overview of sustainable energy, state of the art technologies in the integration of renewable energy, their current impacts and potential future impacts, details on solar and wind technology, standards related to these technologies, variability, dispatch-ability and supply demand balancing, etc.	details on the state of the art technology knowledge about renewable energy, their potential impacts and future challenges	G	R
English	ENG 4815	What Is A Text	Senior capstone course in the EWM track for majors	(See website for full description. The unit on ephemera/monumentality considers the sustainability of inscribed, painted, and written textual systems and substrates, as well as the problems of sustainability inherent in digital textual systems: ecologically dangerous materials and components. economically unsustainable funding and obsolescence of systems; archival unsustainability, etc.)	U	R
English	ENG 5801	History of Text Technologies	Introductory graduate course in the History of Text Technologies (see website for full description)	(See website for full description. For the purposes of this survey, in the unit on digital technologies, we give consideration to the problems of unsustainability that are inherent in digital technologies; ecological damage from components, obsolescence, economic unsustainability from digital platform investment and obsolescence; personal unsustainability in textual technologies from archival issues and values issues.)	G	R
English	LIT 3383	Women in Literature	it raises the sensitivity level of students about the treatment of women in society	raises awareness of the writings of women, raises sensitivity for the problems women have had in society	U	R
Entrepreneurship	ENT 3503	Social Entrepreneurship	Creating new ventures based on social issues in business	Learn 1. about social entrepreneurship and the social entrepreneurial process	U	F

EOAS	EOC 4631	Marine Pollution	This course introduces students to chemical, physical, and biological aspects of dominant marine pollutants, including dissolved toxic metals, complex organic and inorganic contaminants, and particulate pollutants. Topics cover the sources and types of dominant contaminants, their key characteristics, their pathways (as traced through the marine ecosystem from the source to the sinks), their impact on the environment, as well as approaches that could lead to the reduction or elimination of pollutants in the marine environment.		U	R
EOAS	GLY 1000	Dynamic Earth	This course is an introduction to geology as the study of planet Earth, its internal dynamics, and its surficial weathering, erosion, and sedimentary processes. Course credit may not be received for this course and also GLY 1030 or 2010C.		U	R
EOAS	GLY 1000L	Dynamic Earth Laboratory	Geologic lab work including: glacial processes, Antarctic research, groundwater, etc	Gain knowledge of the earth's systems and processes	U	R
EOAS	GLY 1030	Environmental Issues in Geology	This course examines environmental issues as they relate to geological phenomena, which include volcanic and earthquake hazards, resource and land-use planning, air and water pollution, waste disposal, glaciation and sea-level change, landslides, flooding, shoreline erosion, and global change issues.		U	R
EOAS	GLY 1070	Living on the Water Planet	This course provides students with an overview of the basic physics and chemistry of water and the processes that control water supply to natural ecosystems and to human civilization. It covers the hydrologic cycle, floods, drought, groundwater, patterns of water use, threats to water quality, the effects of global climate change on future water supplies, and water issues facing the state of Florida.		U	F

EOAS	GLY 1102	Dinosaurs and Disasters on an Evolving Earth	This course examines the history of Earth and its organisms as recorded in the fossil and rock record; principles of geological and paleontological research; evolution of the dinosaurs, mass extinctions, and effects of past continental movements on the diversity of life.		U	R
EOAS	GLY 2010C	Physical Geology	This course is an introduction to surficial and internal processes affecting a dynamic planet Earth. For majors in geology and natural sciences. Two hour laboratory required.		U	R
EOAS	GLY 3039	Energy, Resources and Environment	This course examines the origin of our energy and mineral resources (e.g., fossil fuels, uranium, hydrogen), their global supply, and the environmental impacts of extracting and utilizing these resources. Emphasis is placed on the chemical nature of the resources and the impact on the chemical composition of the ocean/atmosphere and the global heat budget. Field trips, in-class demonstrations, and homework exercises provide firsthand experience. The sources of energy, availability, renewables, and environmental consequences of waste disposal.		U	F
EOAS	GLY 4730	Marine Geology	This course examines shoreline, shelf and deep ocean processes; marine sediment types and sedimentary environments; plate tectonics; origin of the ocean; pale oceanography; marine mineral resources. Includes research methods cruise for familiarization with marine geologic sampling and sensing devices.		U	R
EOAS	GLY 4750	Geological Field Methods	This course provides a working knowledge and some experience of techniques, procedures, and tools that are essential to geological field research, the professional geologist, and the required summer field course.		U	R

EOAS	GLY 4780	Environmental Field Problems	This course emphasizes the use of field-related observations in the study of environmental problems. Fieldwork includes the study of soils, surface waters and groundwater, erosion and mass wasting, and the chemical contamination of soils and surface waters. Evaluation of student performance in the course is based upon a series of written reports.		U	R
EOAS	GLY 4884	Environmental Geology I	This course examines the application of geologic and geochemical principles to environmental issues. Topics include: an evaluation of contaminants in surface water and ground water; hydrocarbon geochemistry and petroleum storage tank problems; waste management, including solid, toxic, and nuclear waste; air quality issues including radon and asbestos; geologic hazards in upland and coastal areas; environmental geologic methods and instrumentation; quality assurance and quality control in environmental analysis; principles of toxicology; risk assessment and risk management; and environmental assessments.		U	R
EOAS	GLY 5135	Quaternary Geology			G	R
EOAS	GLY 5265	Nuclear Geology			G	R
EOAS	GLY 5267	Stable Isotopic Tracers in the Environment			G	R
EOAS	GLY 5425	Tectonics			G	R
EOAS	GLY 5455	Intro to Geophysics			G	R
EOAS	GLY 5465	Geomechanics			G	R
EOAS	GLY 5516	Stratigraphy and Sequence Analysis			G	R
EOAS	GLY 5556	Hydrodynamics			G	R
EOAS	GLY 5575	Coastal Geology			G	R
EOAS	GLY 5577	Sedimentary Basin Analysis			G	R

EOAS	GLY 5826	Numerical Modeling of Groundwater Flow			G	R
EOAS	GLY 5885	Geologic Hazards Assessment			G	R
EOAS	GLY 5887	Environmental Geology	This course examines the application of geologic and geochemical principles to environmental issues. Topics include: an evaluation of contaminants in surface water and ground water; hydrocarbon geochemistry and petroleum storage tank problems; waste management, including solid, toxic, and nuclear waste; air quality issues including radon and asbestos; geologic hazards in upland and coastal areas; environmental geologic methods and instrumentation; quality assurance and quality control in environmental analysis; principles of toxicology; risk assessment and risk management; and environmental assessments.		G	R
EOAS	GLY4820	Principles of Hydrology	This course focuses on the fundamentals of hydrogeology with an emphasis on groundwater flow and hydrochemistry. Both theory and applications are addressed.		U	R
EOAS	ISC 2003	Global Change: Its Scientific and Human Dimensions	This course covers global environmental change, scientific and human dimensions, and international public policy implications. The science behind, and impacts from, global climate change.		U	F
EOAS	ISC 3076	Science, Technology, and Society			U	F
EOAS	MAP 5431	Introduction to Fluid Dynamics			G	R

EOAS	MET 3103C	Climate Change Science	This course enables students to explore the science behind our understanding of climate change. The course provides an in-depth exploration of the use of proxy, in situ, remote-sensing data, climate models, and their public policy implications. Students gain experience in evaluating internal and external forcings on the climate system and make quantitative assessments of change. The course also gives students an understanding of energy transfer methods between the atmosphere, cryosphere, oceans, and fresh water systems.		U	F
EOAS	MET 4159r	Special Topics in Meteorology	Atmospheric chemistry of major pollutants and greenhouse gases	understand the industrial and chemical sources of pollutants in the atmosphere, and their consequences for human and environmental health	U	R
EOAS	MET 5105	Global Climate System			G	R
EOAS	MET 5135	Dynamic Climatology			G	R
EOAS	MET 5406	Satellite Observations and Their Applications in Numerical Weather Prediction			G	R
EOAS	MET 5407	Fundamentals of Atmospheric Data Assimilation			G	R
EOAS	MET 5411	Radar Meteorology			G	R
EOAS	MET 5455	Cloud Physics			G	R
EOAS	MET 5505C	Advanced Synoptic Lecture Laboratory I			G	R
EOAS	MET 5506C	Advanced Synoptic Lecture Laboratory II			G	R
EOAS	MET 5533	Tropical Meteorology I			G	R

EOAS	MET 5534	Tropical Meteorology II			G	R
EOAS	OCB 4631	Estuarine and Coastal Ecology	This interdisciplinary course addresses the ecology of estuaries and the part of the inshore waters with which estuaries interact directly. The lectures address the general ecological principles that govern the productivity and diversity of estuaries, including their hydrodynamics, sedimentology, chemistry, as well as plant and animal community structure. Key species of estuarine systems are introduced and cycles of carbon and nutrients are explained.		U	R
EOAS	OCB 4637	Marine Benthic Ecology	This course studies the physical setting and ecological organization of the communities found in the rocky intertidal, in the fouling habitat, on sandy beaches, in subtidal soft bottoms, and in the deep sea. This is presented through lectures, substantial reading, and class discussions.		U	R
EOAS	OCB 5015	Marine Nekton: Larval Fish to Whales			G	R
EOAS	OCB 5050	Basic Biological Oceanography			G	R
EOAS	OCB 5565	Marine Primary Production			G	R
EOAS	OCB 5635	Selected Topics in Coastal Ecology			G	R
EOAS	OCB 5636	Marine Microbial Ecology			G	R
EOAS	OCB 5639	Marine Benthic Ecology			G	R

EOAS	OCC 4060	Environmental Science Modeling	This course gives students an understanding of explanatory and predictive models of the earth's systems and environmental processes therein. Analytical and numerical methods for solving equations are examined and applied. Discussions cover relevant scientific issues, mathematical and computational procedures, visualization techniques, as well as the use of models in research and decision making.		U	R
EOAS	OCC 5050	Basic Chemical Oceanography			G	R
EOAS	OCC 5052	Aquatic Chemistry			G	R
EOAS	OCC 5062	Marine Isotopic Chemistry			G	R
EOAS	OCC 5415	Marine Geochemistry			G	R
EOAS	OCC 5417	Geochemical Ocean Tracers			G	R
EOAS	OCC 5554	Atmospheric Chemistry			G	R
EOAS	OCE 3555	Environmental Science II: Habitable Planet	This course explores the Earth system at and above the surface of the Earth. It combines Earth and biological sciences to explore the co-evolution of the Earth and life over geological time. Evolution of the hydrosphere, atmosphere, and lithosphere are discussed.		U	R
EOAS	OCE 4008	Principal Oceanography	A science major or minor status and junior or senior standing. This course focuses on dynamic motions and life processes in the marine environment. Long-term geologic history of the oceans and recent changes caused by man. An overview of oceanography for upper-division students majoring in science, mathematics, or science teaching.		U	R

EOAS	OCE 4017	Current Issues In Environmental Science	This course is taught at an introductory level and includes discussions of current ground-breaking research, environmental problems, and approaches to solving them. It consists of presentations by experts on their current research topics or environmental issues. Covers topics such as overpopulation, climate, sea level, energy, water resources, food production.	Equip students to evaluate more effectively the decision-making and planning choices made at municipal and regional levels	U	F
EOAS	OCE 4064	Marine Conservation Biology	The purpose of this course is to understand anthropogenic impacts on the world's marine biological resources and ways to mitigate those impacts. The course will begin with a brief overview of some relevant key concepts in marine biology and ecology, the next portion will focus on anthropogenic activities and how they affect the global ocean and marine biodiversity. The last portion of the class will focus on means of protecting the ocean's life through responsible management.	By the end of this course you should be able to: - identify anthropogenic activities which have the greatest impact on marine biodiversity - discuss the direct and indirect impacts of anthropogenic activities on marine fauna - explain the impact of the loss of higher predators and large herbivores on their larger ecosystem - explain the impact of the loss of benthic habitat-forming species on fisheries and the broader ecosystem - explain the national and international hierarchy for governing mineral and biological extraction from the sea - discuss the role and types of marine protected areas and their impact on protecting and recovering biodiversity and fisheries species - have an idea of how you as an individual can help protect marine fauna	U	R
EOAS	OCE 4265	Coral Reef Ecology	In this course, the student learns the components of warm water coral reef ecosystems, their functions and interactions, and their response to environmental change. The biological, chemical and physical processes that govern the ecology of warm water coral reef ecosystems are addressed as well as the anthropogenic impact on reef ecosystems and the management of coral reef ecosystems.		U	R
EOAS	OCE 4930	Studies in Oceanography	Topics vary.		U	R
EOAS	OCE 5018	Current Issues In Environmental Science	This course is taught at an introductory level and includes discussions of current ground-breaking research, environmental problems, and approaches to solving them. It consists of presentations by experts on their current research topics or environmental issues.		G	F

EOAS	OCE 5065	Marine Conservation Biology	The purpose of this course is to understand anthropogenic impacts on the world's marine biological resources and ways to mitigate those impacts. The course will begin with a brief overview of some relevant key concepts in marine biology and ecology, the next portion will focus on anthropogenic activities and how they affect the global ocean and marine biodiversity. The last portion of the class will focus on means of protecting the ocean's life through responsible management.	By the end of this course you should be able to: - identify anthropogenic activities which have the greatest impact on marine biodiversity - discuss the direct and indirect impacts of anthropogenic activities on marine fauna - explain the impact of the loss of higher predators and large herbivores on their larger ecosystem - explain the impact of the loss of benthic habitat-forming species on fisheries and the broader ecosystem - explain the national and international hierarchy for governing mineral and biological extraction from the sea - discuss the role and types of marine protected areas and their impact on protecting and recovering biodiversity and fisheries species - have an idea of how you as an individual can help protect marine fauna	G	R
EOAS	OCG 3103	The Earth System	This course is an examination of the modern approach to understanding Earth's climate history and climate change on a global scale.		U	F
EOAS	OCP 5160	Ocean Waves			G	R
EOAS	OCP 5256	Fluid Dynamics: Geophysical Applications			G	R
EOAS	OCP 5265	Main Ocean Thermocline			G	R
EOAS	OCP 5285	Dynamic Oceanography			G	R
Geography	EVR 4314	Energy and Society	This course explores the demand and efficient use of energy from fossil fuels and alternate renewable sources, and how energy impacts urban and environmental sustainability.		U	F
Geography	GEA 2270	Florida	This course focuses on the physical, social, and economic geography of the state, including growth and environmental issues.		U	F
Geography	GEA 4213	U.S. National Parks	This course reviews the history, social, and environmental significance of America's national parks.		U	R

Geography	GEO 1330	Introduction to Environmental Sciences/Studies	This course explores the causes of local and global environmental problems and their impacts, including resource use, pollution, ecosystems, and population growth. This course introduces students to some of the most pressing environmental issues of our time. Understanding complex environmental problems and potential solutions requires multiple disciplinary perspectives. We will examine issues from scientific, social, economic and political perspectives. In other words, this is a truly interdisciplinary general education course. The class is intended to help you improve your ability to read critically, to explore new subject matter creatively and efficiently, and to communicate your ideas	· Recognize the magnitude and breath of society's impact on the environment · Appreciate the nuances and complexities of important environmental debates · Learn how to make an effective argument with stories and scientific evidence · Engage in activities that increase awareness of where we live, what we consume, what we waste, and the consequences of our decisions	U	F
Geography	GEO 1400	Human Geography	This course is an introductory survey of world cultures, population problems, global economic restructuring, international development, and political interdependence.		U	F
Geography	GEO 2200C	Physical Geography	This course is an overview of Earth-sun relations, weather, climate, landforms, water systems, soils, and vegetation.		U	R
Geography	GEO 4114	Environmental Field Methods	This course focuses on the design and implementation of a field-based project employing field sampling, GIS, GPS, and exploratory statistical methods.		U	R
Geography	GEO 4300	Biogeography	This course examines the spatial distributions of flora and fauna, ecosystem change, and human interventions such as logging, invasive species, and wilderness preservation.		U	R
Geography	GEO 4357	Environmental Conflict and Economic Development	This course examines controversies over the use, transformation, and destruction of nature, including political ecology.		U	F
Geography	GEO 4372	Natural Resource Assessment and Analysis	This course examines the assessment and analysis of policies concerning natural resources and environmental management in the U.S. and internationally.		U	F

Geography	GEO 4376	Landscape Ecology	This course offers a review of methods on analyzing geographic patterns of natural phenomena, including ecological conservation, natural resource management, landscape and urban planning, as well as human-environmental interactions and implications. Familiarity with software packages such as ArcGIS is assumed.		U	R
Geography	GEO 4403	Global Change, Local Places	This course examines four aspects of global change—economic, environmental, cultural, and political—with a focus on how globalization is impacting individual countries and how places are responding to globalization’s challenges.		U	F
Geography	GEO 4700	Transport Geography	This course offers a review of the literature and techniques for the spatial impacts of transportation systems, including functionality, and their role on society, the economy, energy, the environment, and sustainability.		U	F
Geography	GEO 4930	Special Topics in Geography			U	R
Geography	GEO 5115	Environmental Field Methods	This course focuses on the design and implementation of a field-based project employing field sampling, GIS, GPS, and exploratory statistical methods.		G	R
Geography	GEO 5305	Biogeography	This course examines the spatial distributions of flora and fauna, ecosystem change, and human interventions such as logging, invasive species, and wilderness preservation.		G	R
Geography	GEO 5345	Disaster Preparedness and Hazards Mitigation			G	R
Geography	GEO 5358	Environmental Conflict and Economic Development	This course examines controversies over the use, transformation, and destruction of nature, including political ecology.		G	R
Geography	GEO 5377	Natural Resource Assessment and Analysis	This course examines the assessment and analysis of policies concerning natural resources and environmental management in the U.S. and internationally.		G	R

Geography	GIS 5305	Geographic Information Systems for Environmental Analysis and Modeling			G	R
Geography	GIS 5306	Environmental Change Modeling			G	R
Geography	IFS 2012	Sustainable Society	This course provides students with the opportunity to observe and inquire about sustainable practices through field studies at local organic farm, hydro-power station, new urbanism community, and recycling facilities, etc., as well as through interactions with community-based programs. Students engage in critical thinking about the sustainability of human society and the environment from various aspects, which include producers, consumers, public-service sectors, and policy makers.		U	F
History	AMH 4630	North American Environmental History	This course introduces the changing relationships between human beings and the natural world in America through time.		U	F
History	AMH 4633	The Nature of Florida	This course applies the methods and approaches of environmental history to Florida and the southeastern United States.		U	R
History	AMH 4634	Florida Environmental History	This course applies the methods and approaches of environmental history to Florida, considering the changing relationships between human beings and the natural world through time. The field explores how nature has helped to shape culture as well as how humans have modified the natural world and transformed the land.		U	F
History	AMH 5635	Florida Environmental History	This course applies the methods and approaches of environmental history to Florida, considering the changing relationships between human beings and the natural world through time. The field explores how nature has helped to shape culture as well as how humans have modified the natural world and transformed the land.		G	F

History	AMH 5636	North American Environmental History	This course introduces the changing relationships between human beings and the natural world in America through time.		G	F
History	AMH 5637	The Nature of Florida	This course is an online course that applies the methods and approaches of environmental history to Florida and the southeastern United States.		G	R
History	HIS 4930	Environmental Policy			U	R
History	HIS 4935	Sr. Sem.: Environmental Activism			U	F
History	HPS 3323	History and Philosophy of Environmental Science	This course examines the development of public health and the history of medicine in the United States from the colonial period to the present. The course examines changes in medical knowledge, the medical profession, governmental responsibilities, public responses; how individuals accept, modify, or reject medical authority; how race, class, gender, and ethnicity shape health practices and the delivery of medical care; how we protect the health of a community; and what constitutes a public hazard.		U	R
History	HPS 4260	Empiricism Before Science: Religion, Natural History, and Natural Philosophy	This course adopts a historiographical perspective and explores the idiosyncratic projects, socio-cultural contexts, and theological horizons of early modern natural philosophy and natural history. Topics draw on primary and secondary sources and include the role of "spirits" in corpuscular philosophy and the place of "monsters" in the natural world.		U	R

History	IFS 2026	Environment and Society	This interdisciplinary course in environmental history explores numerous diverse perspectives of the environment: history, ethics, literature, art, and, of course, science. The course asks, "What is the relationship between humans and the natural world?" and explores how nature has helped to shape culture as well as how humans have modified the natural world and transformed the land in the process of extracting resources, building structures, producing pollution, and importing exotic species.		U	F
History	WHO 4235	Disease, Race, and the Environment	This course examines the close relationship between disease, race, and environment in the development of civilizations of the world.		U	R
History	WHO 5238	Disease, Race, and the Environment	This course examines the close relationship between disease, race, and environment in the development of civilizations of the world.		G	R
Hospitality	HFT 3700	Tourism Management and the Environment	This course focuses on tourism management, organization, and development. Emphasis on economic and environmental issues confronting the industry such as balancing use and preservation. Open to non majors.		U	F
Interior Design	IND 3430	Lighting Fundamentals	Advanced technical aspects of interior design with emphasis on lighting, electrical plans, reflected ceiling plans, measurements and acoustics.	1. Master an awareness of, an understanding of, or a competency in the aesthetic, mathematical and mechanical approaches to lighting and electrical systems design. This involves studies in the basic principles of electricity, lighting and electrical products.	U	R
Interior Design	IND 3627	Sustainable Design	This course gives students a basic introduction to the fundamentals of sustainable design in order to better understand the inter-relationships between the built environment and nature. Review of Sustainable practices in interior design and architecture with emphasis on LEED	<ul style="list-style-type: none"> • Comprehend the scientific theories associated with sustainability. • Explain environmental concerns and challenges related to natural resources. • Explain policies, issues, and legislation related to sustainable design. • Apply the principles of sustainability as they relate to the building envelope as well as the interior. • Understand the categories associated with Leadership in Energy and Environmental Design (LEED). • Apply the sustainable principles and LEED requirements in a design project 	U	F

Interior Design	IND 4243	Studio 4 Residential Design	A combination of class lectures, discussions and studio lab sessions intended to provide majors with specialized knowledge and skills for residential design. This will include project research, project programming, creative problem solving, space planning, the selection of interior design products, and advanced visual and oral project presentation.	At the conclusion of this course you will be able to • gather, analyze, summarize and report relevant programming information that supports original design creation. • interview and document client information, determining their needs and desires for a project • write supportive statements including concept and design statements that describe intent and outcomes and narratives that describe the emotional experience of a project solution • derive design criteria from programming resources relevant and applicable to a given project • present design solutions verbally and visually so that they are compelling and understandable • generate an original design for residential projects including concepts, concept statements, lighting, space planning, product selection, and site analysis • apply guidelines effectively for universal design, visitability, building codes and other material to an original design	U	R
Interior Design	IND 5628	Principles of Sustainable Design	This course gives students a basic introduction to the fundamentals of sustainable design in order to better understand the inter-relationships between the built environment and nature.		G	F
Law	LAW 6470	Environmental Law			G	R
Law	LAW 6480r	Natural Resources Law			G	R
Law	LAW 7268	International Environmental Law			G	R
Law	LAW 7475	Coastal and Ocean Law			G	R
Law	LAW 7476	Law of the Sea			G	R
Law	LAW 7477	Environmental Issues in Business Transactions			G	R
Law	LAW 7481	Energy Law and Policy			G	R
Law	LAW 7482	Endangered Species Protection Law			G	R

Leadership Studies	LDR 2162	Leadership in Groups and Communities	This course is designed to inspire, teach, and engage students in the process of learning leadership within the context of working with groups and communities. This course helps students develop the skills necessary in order to be effective in the leadership process and to practice these skills within their community. The course is highly interactive, with student participation and outside class involvement as critical components to the learning process.		U	F
Leadership Studies	LDR 2213	Leadership for Social Justice	This course introduces students to theoretical frameworks in the field of social justice. Through these theories, the notions of privilege, oppression, power and difference are explored. Attention is given to specific social justice issues related to gender, sexual orientation, race, religion, ability, age, and class. Students examine social justice in the context of leadership and come to understand their unique role in creating social change on campus, in their academic discipline, and within our larger society.		U	F
Leadership Studies	LDR 2290	Leadership and Sustainability in Action	This course is designed to introduce students to the concept of leadership and action related to sustainability. It looks at the interconnectedness and complexity of the three pillars of sustainability (environment, economic, and social) as well as discusses the development of the leadership skills needed to create social change. In conjunction with class discussions and readings, students develop a personal sustainability plan to help align passion and values into active practice.		U	F
Leadership Studies	LDR 3215	Leadership and Change	This advanced undergraduate leadership course examines the change process and prepares leaders who are effective in working with individuals, groups, and organizations in leading and managing change. This is an interactive theory-to-practice course, focused on leadership as a change process.		U	F

Marketing	MAR 3503	Consumer Behavior	This course acquaints the student with the fundamental theories from the behavioral sciences as applied to the consumer decision making process.		U	R
Marketing	MAR 5107	Business Ethics and Social Responsibility			G	R
Marketing	MAR 5125	Marketing Strategy in the Global Environment			G	R
Marketing	MAR 5505	Consumer Behavior	This course acquaints the student with the fundamental theories from the behavioral sciences as applied to the consumer decision making process.		G	R
Marketing	MAN 5501	Production and Operations Management	Covers the range of OM topics with discussions on sustainability included	Should have a working knowledge of OM at the end of the course	G	R
Mathematics	MAP 2480	Biocalculus Computer Lab	This computer laboratory applies calculus methods and mathematical programming software to assist students in solving problems from biology, medicine, and psychology.	This course is designed to introduce students to topics in computational and mathematical biology. Problems in biology, medicine and physiology are used to illustrate how computation and mathematics can improve and enhance their understanding. The purpose of the course is • to improve the student's use of technology and computers • to introduce students to topics in computational and mathematical biology • to use techniques from Calculus 1 to analyze and solve problems in biology • to introduce students to Scilab and similar software	U	R
Mechanical Engineering	EML 3100	Introduction to Engineering Thermodynamics	Introduces students to mass and energy flows, energy conversion and devices.	Students will understand thermodynamic principles of systems.	U	R
Mechanical Engineering	EML 4450	Energy Conversion Systems for Sustainability	This course presents the challenge of changing the global energy system so it addresses reducing dependence on finite fossil energy sources and moving to environmentally sustainable energy sources. The emphasis is on greenhouse gas emissions-free energy production strategies, including renewable energy sources such as solar, wind and biomass. Topics include photovoltaic cells, fuel cells, and thermoelectric systems.		U	F

Mechanical Engineering	EML 4452	Sustainable Power Generation	This course is a continuation of energy-conversion systems for sustainability and focuses on solar electricity, biopower, biofuels, and hydrogen as energy media. The course also explores whether hydrogen-based transportation is a practical option.		U	F
Mechanical Engineering	EML 5451	Energy Conversion Systems for Sustainability	This course presents the challenge of changing the global energy system so it addresses reducing dependence on finite fossil energy sources and moving to environmentally sustainable energy sources. The emphasis is on greenhouse gas emissions-free energy production strategies, including renewable energy sources such as solar, wind and biomass. Topics include photovoltaic cells, fuel cells, and thermoelectric systems.		G	F
Mechanical Engineering	EML 5453	Sustainable Power Generation	This course is a continuation of energy-conversion systems for sustainability and focuses on solar electricity, biopower, biofuels, and hydrogen as energy media. The course also explores whether hydrogen-based transportation is a practical option.		G	F
Philosophy	PHI 2620	Environmental Ethics	An examination of environmental issues past and present, and how they have made an impact upon contemporary society. Also analyzes the historical development of environmental perspectives and the ethical theories that have been generated by these approaches.		U	F
Political Science	PUP 4203	Environmental Politics and Policy	This course focuses on the actions taken by government to protect and improve environmental quality in the United States. It includes such topics as the underlying scientific principles, the major actors in policy making, existing legislation, and future challenges. Background in science is not necessary.		U	F

Political Science	PUP 4931r	Special Topics in Public Policy	Policy alternatives and the policy-making process on a specific contemporary policy question in America, e.g., science research and development, energy, regulation, taxes, environment. Varies with the instructor and semester.		U	R
Political Science	PUP 5007	Models of Public Policy-Making			G	R
Public Administration	PAD 4382	Disaster Recovery and Mitigation	This course is designed to provide an overview of recovery and mitigation activities in the post-disaster environment. Focusing on the "Recovery Phase" initially, course materials examine the policy and planning mechanisms involved in short and long term rehabilitation of distressed communities. A similar examination from the "Mitigation Phase" is also made.		U	R
Public Administration	PAD 4936	Special Topics in Public Administration	This course examines the fundamental and unique features of private sector emergency management and business continuity planning. It covers important areas such as risk evaluation, business impact analysis, training, plan maintenance, and the role of business sector recovery in community recovery.		U	R
Sociology	SYD 3020	Population and Society	This course examines the causes and consequences of population change in the United States and the world with an assessment of the impact of demographic change on various social institutions.		U	R
Sociology	SYD 4510	Environmental Sociology	This course examines the larger social forces that shape our natural environment; the social foundations of environmental problems; and the social responses to environmental issues, conflicts, and movements.		U	F
Sociology	SYD 5043	International Population Dynamics	determinants and consequences of population change at global and societal levels	demonstrate through writing and research an understanding of political, economic and cultural forces that affect birth, death and migration rates	G	R
Sociology	SYD 5134	Environmental Epidemiology			G	R

Sociology	SYP 3350	Collective Action and Social Movements	There have been scores of social movements in the U.S. and around the world in this century. This course explores the origins and organization of social movements, the dilemmas and challenges facing social movements, the relationship between social movements and political institutions, and the role of social movements in causing social change.		U	R
Sociology	SYP 3454	The Global Justice Movement	This course critically examines the history, organization, strategies, ideology, opponents, culture, and future prospects of the global justice movement.		U	R
Teacher Education	EDF 1005	Introduction to Teaching	This course attempts to cover all elements of the teaching profession	Understanding of Social, Political, historical and philosophical bases of education. I personally interject numerous examples of sustainability in the classroom and how students can help with this in all subject areas, though my specialty is the science content area.	U	R
Urban & Regional Planning	URP 4022	Collective Decision Making	This course provides an introduction to planning as a collective decision-making tool, and introduces the concepts of efficiency, equity, and environmental quality as competing bases for public decisions. The course examines tools for contributing to public decisions in varying circumstances, including unitary and diverse decision makers, certain and uncertain environments, and simple and complex goals.		U	R
Urban & Regional Planning	URP 4318	Growth Management and Environmental Planning	This course provides a general introduction to growth management and environmental planning through an overview of general planning history, basic legal theory, principles of growth mgmt/land use planning, and introductory environmental management approaches. The first portion of the course covers basic growth management principles, both to identify issues and to study current trends in planning. The second portion of this course covers current practices and approaches to environmental planning that are important to defining environmental planning problems and evaluating alternative courses of action.		U	F

Urban & Regional Planning	URP 4402	Sustainable Development Planning in the Americas	Examines various dimensions of the “sustainable development” paradigm and its local-global policy implications, issues, and controversies with a focus upon North America and Latin America. Organized in three modules: 1) environmental philosophies that have influenced the movement; 2) North American approaches to planning for sustainable development; and 3) critical issues of sustainable development in Latin America.		U	F
Urban & Regional Planning	URP 4404	River Basin Management and Planning	This course introduces river basin management and planning and takes a systemic approach from biological, hydrological, and geopolitical viewpoints. Special emphasis is placed on the planning and management of transboundary (interstate and international) basins. The focus is on world river basin systems as well as on the local Apalachicola-Chattahoochee-Flint basin. Students are introduced to technical concepts and tools, including negotiation and math simulation tools.		U	R
Urban & Regional Planning	URP 4423	Intro to Environmental Planning and Resource Management	A general introduction to the problems of resource management and environmental planning, with an overview of problems and potential solutions and their relation to other public policy areas such as land-use control and regional development.		U	R
Urban & Regional Planning	URP 4710	Intro to Transportation Issues and Transportation Planning	An introduction to contemporary U.S. transportation problems, sources of funding, and legislation. Presents the theory and methods employed by planners in the process of resolving transportation problems.		U	R

Urban & Regional Planning	URP 4936	Pedestrian Oriented Communities	Increasing pedestrian and bike activity can make our communities healthier, more equitable, and less damaging to the environment. This course will explore the various ways that non-motorized travel (i.e., walking and biking) can be made more desirable and safe. This includes planning, design, and implementation of 1) bike and pedestrian facilities/networks, 2) land use patterns that support non-motorized travel, and 3) attractive streetscapes with human-scale design.	At the finish of the course, students are expected to have gained an understanding of: <ul style="list-style-type: none"> • The benefits of non-motorized travel • The role that walking and biking currently play and can potentially play in a modern transportation system • How planning, policy, and design can influence an individual's propensity to walk or bike • Best practices in pedestrian and bike planning • How to critically evaluate a transportation network from the perspective of a pedestrian or cyclist • How to make recommendations that will improve the bike/pedestrian environment for a given road, intersection, or neighborhood • Understanding the challenges to properly implementing pedestrian and bike friendly practices 	U	R
Urban & Regional Planning	URP 4936	Sustainable Transportation	This course will examine the concepts, policies, and practices that relate to creating a more sustainable transport system. This will include an exploration of problems such as vehicle emissions, reliance on non-renewable and foreign sources of fuel, exclusion of those who can't drive (i.e., the poor and disabled), sedentary lifestyles, and finding equitable ways to finance the construction and maintenance of transport facilities. The course will further explore the potential solutions to these problems.	At the finish of the course, students are expected to: <ul style="list-style-type: none"> • Understand what it means to have a transport system that is environmentally, socially, and economically sustainable. • Understand where our current auto-oriented transport system fails with regard to sustainability goals. • Make a coherent argument as to why transportation officials need to implement more sustainable policies and practices. • Have a working knowledge of the policies/practices that are commonly proposed to make transportation more sustainable. • Have the ability to critically assess the viability of such policies/practices. 	U	F

Urban & Regional Planning	URP 5312	Growth Management	<p>This course is designed to provide a detailed overview of growth management principles and practices in the United States. A substantial portion of the course will focus on land use policies and approaches to comprehensive planning in local governments and states that are national leaders in growth management policy, including the states of Florida, Oregon and Maryland, and local governments from a variety of regions in the USA. In this course we will also discuss the genesis of these different approaches to managing growth. Given our setting and the high percentage of the department's graduates that work in Florida, the course will provide a detailed overview of the Florida growth management and comprehensive planning approach. The course also will look at the role comprehensive plans play in shaping communities, the state's role in reviewing these plans, and the role of citizens in the planning process. The course will introduce concepts and programs key to growth management in Florida, including consistency, concurrency and compact urban form. Recent changes to the state's growth management system will also be discussed.</p>	<p>1. To understand the concept of "sprawl", the problems rightly attributed to this development pattern, and the issues that arise in promoting different urban patterns. 2. To provide a basic understanding of some of the most important tools and techniques employed by planners to manage growth. 3. To understand the evolution of growth management efforts in the United States. 4. To acquire a detailed understanding and working knowledge of the Florida growth management and comprehensive planning approach. 5. To introduce students to other growth management approaches in the United States. 6. To utilize the scholarly literature to investigate the actual impacts of different growth management policies on land use patterns, travel behavior, and government budgets.</p>	G	F
Urban & Regional Planning	URP 5350	Pedestrian Oriented Communities	<p>Increasing pedestrian and bike activity can make our communities healthier, more equitable, and less damaging to the environment. This course will explore the various ways that non-motorized travel (i.e., walking and biking) can be made more desirable and safe. This includes planning, design, and implementation of 1) bike and pedestrian facilities/networks, 2) land use patterns that support non-motorized travel, and 3) attractive streetscapes with human-scale design.</p>	<p>At the finish of the course, students are expected to have gained an understanding of:</p> <ul style="list-style-type: none"> • The benefits of non-motorized travel • The role that walking and biking currently play and can potentially play in a modern transportation system • How planning, policy, and design can influence an individual's propensity to walk or bike • Best practices in pedestrian and bike planning • How to critically evaluate a transportation network from the perspective of a pedestrian or cyclist • How to make recommendations that will improve the bike/pedestrian environment for a given road, intersection, or neighborhood • Understanding the challenges to properly implementing pedestrian and bike friendly practices 	G	F

Urban & Regional Planning	URP 5405	River Basin Management and Planning	This course introduces river basin management and planning and takes a systemic approach from biological, hydrological, and geopolitical viewpoints. Special emphasis is placed on the planning and management of transboundary (interstate and international) basins. The focus is on world river basin systems as well as on the local Apalachicola-Chattahoochee-Flint basin. Students are introduced to technical concepts and tools, including negotiation and math simulation tools.		G	
Urban & Regional Planning	URP 5421	Intro to Environmental Planning & Natural Resources Management	This course will provide the opportunity for students to develop a better understanding of how land use and environment are linked. We will examine some of the major environmental challenges we have faced in the United States, how we have responded to those challenges in the past, and how we might collectively and creatively think toward future solutions. In particular, the course focuses on environmental planning methods to address problems at local, regional, and national scales; land use analysis techniques to understand existing conditions; and management approaches that aim to protect environmental resources and improve land development. By necessity, the interdisciplinary course draws from the fields of planning, geography, design, land use law, public policy, economics, natural science, engineering, and ethics.	<ul style="list-style-type: none"> • understand the principles of environmentally sensitive land use, design and development to enhance social-ecological resilience • understand and apply methods of environmental land analysis • understand foundational principles of environmental science, engineering, ecology, law, and economics as applied to developing alternative strategies for addressing environmental challenges • understand planning processes that facilitate adaptive management and enable multiple valuation frameworks and scientific perspectives to be brought to bear on environmental problems • can utilize basic design techniques and identify technologies for mitigation of environmental impacts 	G	F
Urban & Regional Planning	URP 5422	Coastal Planning			G	R

Urban & Regional Planning	URP 5424	Sustainable Development Planning in the Americas	Examines various dimensions of the “sustainable development” paradigm and its local-global policy implications, issues, and controversies with a focus upon North America and Latin America. Organized in three modules: 1) environmental philosophies that have influenced the movement; 2) North American approaches to planning for sustainable development; and 3) critical issues of sustainable development in Latin America.		G	F
Urban & Regional Planning	URP 5425	Methods of Environmental Analysis			G	R
Urban & Regional Planning	URP 5427	Environmental Legislation and Policy			G	R
Urban & Regional Planning	URP 5429r	Special Topics in Environmental Planning and Resource Management			G	R
Urban & Regional Planning	URP 5716	Transportation & Land Use	This course provides an exploration of the relationship between transportation and land use and the implications of this relationship to planning and policy. The first 2/3 of the course will broadly focus on the transport/land use connection. The last third will focus on practical examples of the integration of transportation and land use planning (such as transit-oriented development and parking regulations).	At the finish of the course, students are expected to have gained: • A theoretical understanding of how transportation investments and policies influence land use patterns • A theoretical understanding of how land use patterns influence the transportation system and the resulting travel behavior. • A working knowledge of the empirical evidence that supports (and occasionally contradicts) the theoretical connections between transportation and land use. • An understanding of how transportation and land use planning can be better integrated in practice and how this integration can play a critical role in creating more sustainable cities and regions.	G	R

Urban & Regional Planning	URP 5939	Sustainable Transportation	This course will examine the concepts, policies, and practices that relate to creating a more sustainable transport system. This will include an exploration of problems such as vehicle emissions, reliance on non-renewable and foreign sources of fuel, exclusion of those who can't drive (i.e., the poor and disabled), sedentary lifestyles, and finding equitable ways to finance the construction and maintenance of transport facilities. The course will further explore the potential solutions to these problems.	At the finish of the course, students are expected to: <ul style="list-style-type: none"> • Understand what it means to have a transport system that is environmentally, socially, and economically sustainable. • Understand where our current auto-oriented transport system fails with regard to sustainability goals. • Make a coherent argument as to why transportation officials need to implement more sustainable policies and practices. • Have a working knowledge of the policies/practices that are commonly proposed to make transportation more sustainable. • Have the ability to critically assess the viability of such policies/practices. 	G	F
Urban & Regional Planning	URP 5939	Food Systems Planning	It is this nexus of food, health, sustainability, resilience, and urban and regional planning that animates this course. We will examine the historical role of food in economic, social, and physical development of place; think about food in a complex social-ecological systems framework; understand ecological and social impacts of the choices we make in food production, distribution and consumption; expose various aspects of food systems that relate to land use planning and decision making; identify planning tools that can be used to characterize and regulate local and regional food systems and more. Students will work through various assignments and projects to become familiar with techniques of food systems analysis and explore food systems planning concepts.	<ul style="list-style-type: none"> • Identified components and key actors of the global food system as it has emerged over the last century and articulated a number of social, ecological and economic impacts of that system • Described how urban planning can interface with the global food system at local and regional scales and what roles planners might play in assessing and shaping policy for local food systems • Enumerated a range of policies, programs and planning tools that can inform and, potentially transform, aspects of the food system to expand access to affordable, healthy, good quality, and culturally appropriate food • Articulated their own positions in a range of debates about food systems policy and planning • Enhanced their analytical and communication skills, both oral and written, as they conduct reviews of plans, policies, and programs and construct new plan and policy language 	G	F
Urban & Regional Planning	URS 1006	World Cities: Quality of Life	In this course, major world cities are examined in terms of their natural, social, and built environments in order to assess those factors that promote quality-of-life and sustainability. Prospects for future growth and change are considered in light of demographic, cultural, economic, and political trends.		U	F
Urban & Regional Planning	URP 5881	Urban Design	Overview of historic and current urban design practices	Understanding and recognition of best practices as related to urban form	G	R