

FullName	Title	Description
AEDECON1200	Exploring Sustainability: SUSTAINS LC Seminar	Designed for SUSTAINS Learning Community students to explore their interests within sustainability, learn about opportunities to be involved in campus and local community sustainability efforts, and connect with campus partners and faculty resources.
AEDECON2001	Principles of Food and Resource Economics	Microeconomic principles applied to allocation issues in the production, distribution, and consumption of food and natural resource use.
AEDECON2500	Introduction to Environment, Economy, Development and Sustainability	Introduces students to principles from various disciplines related to social, economic and environmental sustainability. Students will evaluate key concepts and examine tradeoffs that are a part of sustainability action using case studies.
AEDECON3680	Regional Economics and Sustainable Growth	Designed to study theories and methodologies for analyzing rural and regional economic development, primarily in advanced economies.
AEDECON4310	Environmental and Natural Resources Economics	Economic analysis of the use and management of natural resources and of environmental policy.
AEDECON4330	The Sustainable Economy: Concepts and Methods	Introduces students to core concepts of sustainability in economics and the quantitative methods necessary to understand and evaluate sustainable development.
AEDECON4532	Food Security and Globalization	Examination of the causes of and solutions for food insecurity. Global and local factors that affect access to food are also considered.
AEDECON4535	International Economic Development	Study of the growth and diversification of developing economies and the causes of poverty and inequality. Analyze the impacts of human capital formation, markets, and public policy on development.
AEDECON4567	Assessing Sustainability: Project Experience	Students gain experience in sustainability assessment by applying concepts and quantitative methods to evaluate environmental, economic, social & technical sustainability of specific projects. EEDS major capstone. Co-taught by ENR/AEDE faculty.
AEDECON4597.0	Food, Population, and the Environment	Issues related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these concerns, especially in low-income countries.
AEDECON5330	Benefit-Cost Analysis	Benefit-cost analysis theory and methods and their application to projects pertaining to public infrastructure, agriculture, the environment, natural resources, and human health.
AEDECON5900	Food System Planning and the Economy	Examines the social, environmental and economic costs and benefits of our food production, distribution, and consumption.
AEDECON7320	Advanced Resource Economics	Application of advanced economic theory and methods to the allocation and optimal management of exhaustible and renewable natural resources.
AEDECON4320E	Energy, the Environment, and the Economy	Understand the role of energy in the economy and the environment. Explore the economics of clean, renewable energy, and understand the different policies for pollution control.
AEROENG4938	Wind Energy	Learn about Wind Energy and its potential, modeling and design horizontal axis wind turbines, and analysis of the economic benefits of wind turbine systems.
AGSYSMT2371	Land Surveying for Agricultural and Environmental Systems	Principles of land surveying applied to soil and water management on agricultural, forested, and environmentally sensitive areas. Traditional surveying methods, total stations and GPS will be covered.
AGSYSMT3550	Animal and Rural Waste Management	Management of animal wastes, wastewater and solid waste generated through agricultural practices and rural living to utilize nutrients, recover energy, reuse water, protect public health and abate environmental pollution.
AGSYSMT4575	Applied Agricultural Water Management	Planning and managing the drainage, irrigation, erosion and sediment control, water harvesting and storage systems and agricultural constructed wetlands for the agricultural landscape.
AGSYSMT5786	Environmental Issues in East Asia	STEM students will study emerging, interdisciplinary environmental issues in China, Korea, Japan, Taiwan and Hong Kong, such as air and water pollution, waste management, habitat destruction, exotic species, and energy.
ANIMSCI3400	Management Intensive Grazing	Application of scientific principles of plant growth, animal nutrition and behavior to manage grazing systems for profitable, sustainable livestock enterprises.
ANIMSCI3600	Global Food and Agriculture	The integration of food, agriculture, environment, resources, technology, culture, and trade on a global scale.

ANIMSCI3600E	Global Food and Agriculture	The integration of food, agriculture, environment, resources, technology, culture, and trade on a global scale.
ANTHROP3411	Human Ecological Adaptations	A study of the interactive relationships between humans and their environments, past and present, with a focus on human biology. EEOB 400 recommended.
ANTHROP5623	Environmental Anthropology	Theory and ethnographic examples of human-environment interactions, focusing on the role of culture and behavior in environmental adaptation.
ARCH2220	Sustainability and the Built Environment	Introduction to sustainability and the built environment, emphasis on cultural context, including contributing geographic, political, social, and economic factors which influence the form of the constructed world.
ARCH6810	Environmental, Mechanical, and Electrical Systems in Architecture II	Qualitative and quantitative aspects of environmental issues and building service systems for architecture. Prereq: Grad standing. Not open to students with credit for 663.
ARCH2220E	Sustainability and the Built Environment	Introduction to sustainability and the built environment, emphasis on cultural context, including contributing geographic, political, social, and economic factors which influence the form of the constructed world.
ATMOSSC5901	Climate System Modeling: Basics and Applications	An examination of climate system modeling, including their component atmospheric, oceanic, sea ice and land surface models, and their coupling, and their applications.
BUSADM3640.01	Introduction to Sustainability in Business I: Principles and Concepts	An introduction to the topic of sustainability in business.
BUSADM3640.02	Introduction to Sustainability in Business I: Principles and Concepts	An introduction to the topic of sustainability in business.
BUSADM3641	Introduction to Sustainability in Business: Applications & Solutions	An introduction to the topic of sustainability in business with a concentration on the applications and solutions.
BUSADM3642.01	Introduction to Sustainability in Business II: Applications, Solutions and Project Experience	Field projects on sustainable business issues.
BUSADM3642.02	Introduction to Sustainability in Business II: Applications, Solutions and Project Experience	Field projects on sustainable business issues.
BUSADM3640.01	Introduction to Sustainability in Business I: Principles and Concepts	An introduction to the topic of sustainability in business.
BUSADM3642.01	Introduction to Sustainability in Business II: Applications, Solutions and Project Experience	An introduction to the topic of sustainability in business with a concentration on the applications and solutions.
BUSMGT7253	Sustainable Operations	Reviews several sustainable operations strategy models and examines different ways of adopting eco-efficiency principles into business operations through waste reduction and design for recovery.
BUSMGT7254	Introduction to the Global Energy Industry	Reviews the worldwide demand for energy today and its forecasted growth. Through a series of lectures by industry executives, students will glimpse the challenges faced in the coal, nuclear, gas turbine and renewable technology sectors.
BUSMHR2500	Entrepreneurship	Assesses economical, sociological, and psychological foundations of entrepreneurship and its impact on society.
BUSMHR7500	Resolving Social Conflict	Multidisciplinary examination of social conflict, its dynamics and negotiated resolution; offers a broad-based framework for diagnosing and managing conflict applied to legal, environmental, organizational and geopolitical conflict.
BUSMHR7640	Strategies for Business Sustainability: Principles and Concepts	Examination of the principles and concepts involved in developing sustainable businesses.
BUSMHR7641	Strategies for Business Sustainability: Applications and Solutions	Examination of the applications and solutions involved in developing sustainable businesses.

BUSMHR7642	Project Experience in Business Sustainability	Students engage in projects that focus on business sustainability issues.
BUSMHR8203	Seminar: Seminar in Organizational Theory	Theory, research on environmental and structural characteristics of formal organizations and their correlates with particular emphasis on management of the organization in dynamic, global environment.
BUSML4252	Social Marketing & Public Policy	Examines social marketing, which seeks to benefit a targeted population and the general society rather than a marketer or firm. Non-profit, cause marketing, corporate social responsibility, and sustainability issues are explored.
BUSML4385	Building a Sustainable Supply Chain	Focuses on understanding how to measure and impact the long-term sustainability of a company's supply chain operations; learn practices for reducing carbon footprints and creating a more resilient supply chain, while meeting financial goals.
BUSML7215	Global Marketing and Sustainability	Review core concepts of global marketing including, pricing, research, positioning, strategy, social responsibility, communicating with world consumers, and management team development from a sustainability viewpoint.
BUSML7216	Social Marketing & Public Policy	Examination of social marketing, which seeks to benefit a targeted population and the general society rather than a marketer or firm. Non-profit, cause marketing, corporate social responsibility, and sustainability issues are explored.
BUSML7385	Building a Sustainable Supply Chain	Students will learn how to measure and impact the long-term sustainability of a company's supply chain operations; reduce carbon footprints; and create a more resilient supply chain while meeting a firm's financial objectives.
CBE5772	Principles of Sustainable Engineering	Introduces the principles, techniques, and challenges of environmentally conscious decision making in chemical engineering. A study of systematic methods for the analysis and development of sustainable industrial products and processes.
CIVILEN2090	Professional Aspects of Civil and Environmental Engineering	Topics in Civil and Environmental Engineering ethics and practice. Must be taken as soon as possible upon entering the major.
CIVILEN4552	Design and Construction of Flexible Pavements	The design, manufacturing, placement, compaction and maintenance of hot mix asphalt for roadways with coverage on how to determine and specify which mixture to use for a given application. Sustainable roadway design is also covered.
COMM2596	An Introduction to Health, Environment, Risk & Science Communication	Provides a general introduction to the fields of science, risk, environmental and health communication from multiple perspectives including psychological, social, and cultural.
COMM3340	Principles of Environmental Campaigns	A seminar on the principles of strategic communication and campaigns around environmental and risk topics such as green marketing & advertising, environmental advocacy, social marketing, and environmental risk.
CONSYSM5670	Green Building and Sustainable Construction	Introduction to LEED rating systems, major components of sustainable building design and construction as well as other environmental and economic issues of sustainable built environments.
CRPLAN2200	Sustainable Infrastructure Planning	Beneath the streets is a whole system of infrastructure that requires sustainable planning.
CRPLAN2210	Sustainable Urbanism	Globalization is changing cities, economies, social networks, and the environment. Technological innovation, entrepreneurship, and policy making guides the future of sustainable cities.
CRPLAN2798	Comparative Studies in Planning	Planning issues are global in context. Through direct experience studying globalization, migration, sustainability, and public participation, critically understand planning on a global and community scale.
CRPLAN3000	Planning Resilient Environments	Environmental resilience requires a comprehensive planning approach. Through planning techniques and practices, identify practical applications for creating resilient environments.
CRPLAN3200	Place Making	Vibrant public places and sustainable communities are realized when planners visualize and understand spatial relationships at the site, neighborhood and community level.

CRPLAN3400	Planning for Sustainable Economic Development	Understand the intersection of economics, the environment, and development in order to use planning tools to promote sustainable economic development.
CRPLAN4597	The Global Environment in Planning	A review of challenges in developed and developing countries, examining planning issues associated with economic development, social equity, growth and rural development.
CRPLAN5500	Energy Planning	Energy makes cities run, from renewable and non-renewable sources. Energy is a driving opportunity and constraint in urban development.
CRPLAN5800	Microfinance for Planners	Why and how microfinance operations have grown to provide financial services to poor and low-income people on a sustainable basis.
CRPLAN5900	Food System Planning and the Economy	Examines the social, environmental and economic costs and benefits of our food production, distribution, and consumption.
CRPLAN6310	Law and Planning II: Environment and Society	The role of social and environmental justice and other societal considerations in the establishment of a legal framework in planning.
CRPLAN6400	Site Planning and Development	Effective site planning can lead to the development of a strong community. Learn the design, environmental and infrastructure elements that are needed to generate a feasible development project.
CRPLAN6410	Planning for Sustainable Development	Sustainable development is a broad concept; translated into reality through relevant theory and the implementation of key design, policy and project based solutions.
CRPLAN6950	Transportation Studio	Planning for transportation requires an examination of environmental, social, and economic factors, as well as active engagement of decision makers and transportation users alike.
CRPLAN6960	Sustainability Studio	Planning for sustainability requires systems thinking, strategic solutions and collaborative governance. Sustainability plans will be generated through active engagement with a client community.
CRPLAN7130	Creative Placemaking I: Building Creative Communities, Economies and Analyses	First in a sequence of two courses that train students to understand how to effectively and efficiently integrate community development, economic development and cultural development.
CRPLAN7270	Environmental and Energy Modeling	Application of related land use, environmental, and energy models to assess the impacts of urban development on the environment.
CRPLAN7500	Resolving Social Conflict	Multidisciplinary examination of social conflict, its dynamics and negotiated and consensual resolution; offers broad-based framework for diagnosing and managing conflict; applied to legal, environmental, organizational, and geopolitical conflicts.
CRPLAN2210E	Sustainable Urbanism	Globalization is changing cities, economies, social networks and the environment. Technological innovation, entrepreneurship and policy making guides the future of sustainable cities.
CRPLAN3200E	Place Making	Vibrant public places and sustainable communities are realized when planners visualize and understand spatial relationships at the site, neighborhood and community level.
CSHSPMG4620	Principles of Tourism	An overview of the tourism industry including travel motivation and the impacts, both positive and negative, of social, environmental, and economic influences.
DESIGN3552	Interior Design Technology I	Principles of contract documentation, laws, ethics, codes, standards, guidelines and sustainable practices within the context of Interior Design.
DESIGN4650	Collaborative Design	Interdisciplinary knowledge and problems examined and discussed in the context of social responsibility (global and local).
EARTHSC1100	Planet Earth: How It Works	The materials of the Earth's crust, the processes that produce and modify them, the development of the Earth and its life forms through time, and responsible stewardship of the earth's resources. Not intended for ASC B.S. students.
EARTHSC1121	The Dynamic Earth	Plate tectonics; rock forming processes; climate change; energy resources.
EARTHSC1911	Climate Change: Mechanisms, Impacts, and Mitigation	Examination of the basic science of climate change, of the ability to make accurate predictions of future climate, and of the implications for global sustainability by combining perspectives from the physical sciences, the biological sciences, and history.

EARTHSC2155	Energy and Environment	Introduces and examines the fundamentals of energy sources, energy use, energy efficiency, and resulting environmental implications of the various energy supplies.
EARTHSC2203	Environmental Geoscience	Concepts and challenges of geological hazards and resources, environmental pollution, and health; regional and long-range planning; and global change and sustainability.
EARTHSC2204	Exploring Water Issues	Water on Earth, human impacts, and scientific and technological issues related to water resource development and conservation.
EARTHSC2210	Energy, Mineral Resources, and Society	Geologic origin, world distribution, and uses of mineral resources critical to society; topics include mineral and fossil fuels, metallic ores, and industrial minerals.
EARTHSC3411	Water Security for the 21st Century	Examine the major issues that are contributing to the decline in quantity and quality of global freshwater resources and the resultant environmental and societal impacts.
EARTHSC4425	Energy Resources and Sustainability	An examination of the problem of decreasing supplies of fossil fuel, alternative energy sources, and possible accommodations.
EARTHSC4450	Water, Ice, and Energy in the Earth System	Earth's energy budget and the transfer of water between reservoirs. Processes that regulate water transfer, common measurement approaches, and the importance of water in geological processes, global change, and as a resource.
EARTHSC5193.10	Individual Studies in Hydrogeology	Special problems in any branch of hydrogeology for which the student has the proper qualifications.
EARTHSC5193.20	Individual Studies in Global Change and Sustainability	Special problems in any topic in global change and sustainability for which the student has the proper qualifications.
EARTHSC5203	Geo-environment and Human Health	Examine geo-environmental processes that are contributing to human health degradation and the resultant societal impacts.
EARTHSC5206	Advanced Oceanography	Advanced study of geological, chemical, physical, and biological oceanography; their interactions; and their interactions with relevant current issues such as global change modeling, fisheries management, and energy exploration.
EARTHSC5627	Global Biogeochemical Cycles	Examination of processes influencing the cycling of major elements in the environment: anthropogenic alteration of these cycles (e.g. nutrient addition, acid rain, greenhouse gases).
EARTHSC5663	Global Change and Sustainability in the Earth System	Analysis of Earth systems, global environmental change and options for sustainability.
EARTHSC5717	Critical Issues in World Freshwater Resources	Examination of major issues relating to the world's freshwater resources; consideration of increasing water needs with a diminishing supply.
EARTHSC6750	Paleoclimatology	Examination of climate records in ice, lake, and marine cores, tree rings, corals and historical records for a global perspective of Quaternary climate change.
EARTHSC8860	Seminar in Energy Resources	Study of selected deposits of subsurface energy resources, including fossil fuels and geothermal.
EARTHSC8889	Interdepartmental Seminar in Polar and Alpine Studies	A seminar on selected topics including anthropology, biology, climatology, exploration, geology, glaciology, microbiology and soils.
ECE3040	Sustainable Energy and Power Systems I	Introduction to electrical energy systems: history, current trends, renewable and non-renewable sources, rotating machines and their operation, and smart grid initiatives.
ECE3047	Sustainable Energy and Energy Conversion Lab	Laboratory introducing basics of energy conversion processes for electrical energy supply systems utilizing conventional rotating machines and hardware-in-the-loop simulation system for sustainable energy systems.
ECE5237	Photovoltaics Laboratory	Introduction to laboratory techniques for processing and fabrication of inorganic and organic solar cells, and photovoltaic testing and measurement techniques to characterize solar cells.
ECE7842	Advanced Topics in Electric Machines	Advanced topics of electric machines, beginning with dynamic modeling and principles of vector control and evolving into new design and control of electric machines for advanced traction motors and renewable energy generator systems.

ECON3048	Ethics and Social Responsibility in Economic Life	Examines the role of ethical norms and social constraints in determining economic outcomes.
ECON4320	Public Expenditure and Cost-Benefit Analysis	Economics of public choice, public goods, non-market allocations, collective decision-making, and net-benefit maximization for policy majors; case studies and empirical analysis of public choice problems for policy analysts.
ECON4560	Cooperation and Conflict in the Global Economy	The economic, social, and political bases for and responses to increasing global economic integration.
ECON7790	Urban Economics	Application of economic theory to analyze urban economies-- their spatial structure and issues such as residential segregation, government organization, public-good, transportation, sprawl, poverty, and housing.
ECON8841	Public Economics I	Normative and positive theories of the economic functions of government, covering resource allocation, distributional equity and methods of public demand and supply.
EDUTL7014	Epistemologies and Theories in Multicultural and Equity Studies in Education	Examine and focus in depth on various critical epistemologies, theories, and assumptions and the relationships between them and the pursuit of social justice.
EDUTL7035	Teaching for Social Justice	An exploration into economic, political, technological and ecological components of multicultural education as it relates to diversity and social justice.
EDUTL7721	Environmental and Sustainability Education Methods	Orientation to inquiry-based approaches to environmental education and education for sustainability in formal and non-formal settings. Special attention will be given to climate change as a context for framing educational experiences.
EEOB1910	Introduction to Biological Studies- Local Plants (Stone Lab)	Structures, processes, and stages of the plant life cycle; common families of flowering plants; plant geography, ecology, and conservation; and uses of plants. 1-wk course available summer session at Stone Lab.
EEOB3410	Ecology	Distribution and abundance of species, population dynamics, community ecology, ecosystem dynamics, and applied perspectives. Also available summer term at Stone Lab.
EEOB4410	Conservation Biology	Application of ecology, population genetics, and biogeography to the study and conservation of biodiversity, threatened communities, and endangered species.
EEOB5410	Aquatic Ecosystems - Ocean Ecology	Diversity and distribution of marine organisms; population dynamics, productivity, and structure of marine ecosystems; human impact on ocean resources.
EEOB5470	Community and Ecosystem Ecology	A quantitative and descriptive approach to the establishment, development, succession, and dynamics of communities and their interrelations with historic, climatic, soil, and biotic factors.
EEOB6340	Biodiversity Informatics	Methods for managing large data sets and applications in modeling, conservation biology, and global change.
EEOB7220	Modeling in Evolutionary Ecology	Optimization models in evolutionary ecology, including dynamic optimization, evolutionary game theory, and adaptive dynamic models.
EEOB8896.11	EEOB Graduate Seminar: Population Ecology	Current topics in population ecology as related to evolution, ecology, and organismal biology.
ENGLISH3597.03	Environmental Citizenship	Provides tools for environmental citizenship by teaching interdisciplinary perspectives on biophysical/sociocultural forces that shape environments. Addresses general processes through local case studies.
ENGR4891.01	College Seminar - Perspectives on Sustainability	A broad view of sustainability and the environment, with the opportunity to see sustainability through different perspectives. Speakers from different areas of expertise will present on a variety of sustainability topics.
ENGR5050	Humanitarian Engineering	Poverty and underdevelopment. Goal of social justice. Development strategies. Engineering for the poor, weak, and developing communities. Humanitarianism in the university and engineering enterprise.
ENR1110	Soils in Our Environment	Soil as: an irreplaceable natural resource, source of pollution, and as the media for storage and/or inactivation of pollutants. Nutrient pollution of waters, homeowners' problems with soils, and the effect of soils on the food chain.

ENR1200	Exploring Sustainability: SUSTAINS LC Seminar	This seminar course is designed for SUSTAINS Learning Community students to explore their interests within sustainability, learn about opportunities to be involved in campus and local community sustainability efforts, and connect with campus partners.
ENR2100	Introduction to Environmental Science	Introduction to environmental science, the ecological foundation of environmental systems, the ecological impacts of environmental degradation by humans, and strategies for sustainable management of environment and natural resources.
ENR2155	Energy and Environment	This course introduces and examines the fundamentals of energy sources, energy use, energy efficiency, and resulting environmental implications of the various energy supplies.
ENR2300	Society and Natural Resources	Introduction to interactions between humans, natural resources, and ecosystems from a social science perspective.
ENR2360	Ecology and Conservation of Birds	Introduction to the ecology and conservation of birds, with special emphasis on field ornithology and student research projects. Course integrates many concepts to build understanding of how research and management can support bird conservation.
ENR2500	Introduction to Environment, Economy, Development and Sustainability	Introduces students to principles from various disciplines related to social, economic and environmental sustainability. Students will evaluate key concepts and examine tradeoffs that are a part of sustainability action.
ENR3280	Water Quality Management	Causes, consequences, and solutions of pollution in lakes, rivers, wetlands, and groundwater; analysis of the physical, chemical, and biological indicators of water quality.
ENR3300	Introduction to Forestry, Fisheries, and Wildlife	Ecological principles applied to integrated management of forest, fish, and wildlife resources; economic, policy, and administrative aspects of forestry, fisheries, and wildlife management.
ENR3400	Psychology of Environmental Problems	The theory and psychology behind individual and group behavior as it relates to environmental problems.
ENR3470	Religion and Environmental Values in America	Examines development & influence of religious environmental values & their impact on environmental citizenship in America; Jewish, Muslim, Buddhist & Christian environmental perspectives; stewardship, eco-justice & creation spirituality.
ENR3500	Community, Environment and Development	Social change related to natural resource and environmental issues. Includes a focus on community-level initiatives, environmental social movements, and issues of environmental justice.
ENR3530	Women, Environment and Development	Interdisciplinary study of women's roles as environmental stewards and in resource-based development in global context. Attention given to gender differences in environmental and rural development practices.
ENR3600	Management of Public Lands	Examination of parks and recreation concepts including development, rationale, and frameworks for park and recreation systems in the United States.
ENR3900	Sustainability Metrics	Addresses the use of metrics, data, and indicators to measure sustainability and track progress. The course will survey a broad range of environmental challenges and evaluate the choices confronting public and private groups.
ENR4000	Environmental and Natural Resources Policy	Conceptual and historic development, implementation, and evaluation of environmental and natural resource policy.
ENR4320	Sustainable Forest Products	Study of forest operations & environmental effects, including timber harvesting & transport from forest to the mill. Uses of wood, fiber products, & wood waste, including solid wood products, wood composites, biomass energy, & biofuel.
ENR4567	Assessing Sustainability: Project Experience	Students gain experience in sustainability assessment by applying concepts and quantitative methods to evaluate environmental, economic, social, & technical sustainability of specific projects. EEDS major capstone. Co-taught by ENR/AEDE/FABE faculty.
ENR4597.02	Antarctic Marine Ecology and Policy	Historical and contemporary evaluation of Antarctic resource management and its scientific basis.
ENR4648	Environment and Natural Resources Law Enforcement	An examination of the law enforcement function in environment and natural resources and recreation management. Prerequisite for acceptance to the Natural Resources Ranger Academy program.
ENR4900.01	Environment and Natural Resources Management	Integration of technical knowledge with social and institutional constraints as they relate to professions in ENR management. Required of ENR EPDM and ES majors.

ENR4900.02	Environment and Natural Resources Management for Forestry Fisheries and Wildlife	Application and integration of technical knowledge and methodologies in the forestry, fisheries, and wildlife sciences to planning, problem-solving, and decision-making in environment and natural resources.
ENR5210	US Environmental Impact Assessment	Study of impact of human activity in natural resources through evaluation of environmental impact.
ENR5211	International Environmental Impact Assessment	Fundamental concepts of international environmental impact assessment including the legal and institutional frameworks, practice and performance, and social and cultural contexts that shape EIA's implementation worldwide.
ENR5220	Ecosystems of the World: Temperate, Boreal and High Latitude Ecosystems	Intermediate course in ecology emphasizing structure-function relations at broad scales, incorporating soil development, geomorphology, climate, and human impact into analyses of major temperate, boreal, and polar ecosystems.
ENR5222	Ecological Engineering and Ecosystem Restoration	Definition, classification, and practice of Ecological Engineering. Course describes ecological systems and the design of natural systems to provide societal services and benefits to nature.
ENR5225	Ecosystem Modeling	Development and simulation of ecological models for natural resource/ecosystem management; conceptual and symbolic models, simulation techniques on main frame and microcomputers.
ENR5250.01	Wetland Ecology and Restoration	Wetland hydrology, biogeochemistry, vegetation, biotic adaptations. Ecosystem services, classification, and management of wetlands. Fundamental concepts of ecological engineering applied to wetland creation and restoration and river restoration.
ENR5268	Soils and Climate Change	Soil processes, abrupt climate change, trace gases and their properties, global C cycle, gaseous emissions, C-neutral fuels, carbon sequestration, Kyoto Treaty, trading of C credits.
ENR5273	Environmental Fate and Impact of Contaminants in Soil and Water	An overview of contaminant sources, transport through soil and water, and environmental fate and impact to human and ecosystem receptors.
ENR5274	Ecosystems Simulation	A laboratory course in conducting computer simulations of agricultural, forest and aquatic ecosystems addressing both production and environmental protection issues.
ENR5320	Forest Management	Application of biological, economic, and planning principles to address the sustainable management of forest resources with emphasis of the timber resource and associated products.
ENR5322	Arboriculture	Integration of environmental factors and culture practices necessary to establish, grow, and maintain plant function in the landscape in an ethical, cost effective manner.
ENR5325	Public Forest and Lands Policy	Explores fundamental and leading-edge concepts in U.S. public forest and lands policy. Emphasizes political, legal, and administrative issues of federal and state lands, especially forests.
ENR5340	Forest Ecosystem Management	Concepts and methods applied to managing forests across broad landscapes for biodiversity, multiple uses, and ecosystem integrity within the context of traditional forest management.
ENR5342	Principles of Fisheries Ecology and Management	Ecological principles applied to conservation and management of aquatic vertebrates. Principles of fisheries management including social and economic factors.
ENR5355	Aquaculture	Overview of physical, biological and economical factors influencing fish culture systems. World fish production practice comparisons. Emphasis on propagation and conservation efforts.
ENR5360	Principles of Wildlife Ecology and Management	Principles of population and community ecology applied to conservation and mgmt of terrestrial vertebrates. Principles of wildlife management including social and economic factors.
ENR5370	Management of Wildlife Habitat	Principles of wildlife-habitat relationships, natural history of major North American terrestrial ecosystems, and conservation and management of wildlife habitats.
ENR5375	Ecology and Management of Wetlands Birds	Ecology and habitat relationships of wetland birds that inhabit the Great Lakes Erie region. Management of wetlands as wildlife habitat. College course work in Biology or Ecology recommended.

ENR5480	Local Peoples and International Conservation	Uses interdisciplinary thinking to explore the global environmental crises and the conflicts between indigenous/local peoples, conservationists, and policy makers regarding natural resource use.
ENR5560	Rehabilitation/Restoration of Ecosystems	Intermediate-level course dealing with ecosystems drastically disturbed by human impacts and strategies employed to rehabilitate and restore them for long-term biological productivity and use.
ENR5600	Sustainable Agriculture and Food Systems	Integrative look at the social, economic, and production/environmental dimensions of sustainable agriculture and food systems. Particular attention to sociological, soil science and related disciplinary perspectives.
ENR5649	Wildlife Conservation Policy	Overview of fish and wildlife policy in the US and key issues affecting wildlife conservation in North America.
ENR5699	Current Topics in Environment and Engineering	Summer seminar which presents research, management and policy of topics in science, environment and engineering. Taught at F.T. Stone Laboratory.
ENR7310	Principles and Applications of Forest Ecosystem Restoration	Analysis of ecological processes as they relate to the restoration of disturbed forest ecosystems.
ENR7380	Climate and Society	Examines links between climatic changes and human societies and examines social influences on our current state of knowledge, impacts, and potential responses.
ENR7400	Communicating Environmental Risk	Introduction to the design and implementation of public-focused risk communication as it relates to environmental, agricultural and public health contexts.
ENR7500	Resolving Social Conflict	Multidisciplinary examination of social conflict, its dynamics & negotiated & consensual resolution; offers broad-based framework for diagnosing & managing conflict; applied to legal, environmental, organizational, & geopolitical conflicts.
ENR7520	Environmental Science and Law	Introduction to the common and statutory law and administration of environmental protection, with special emphasis on scientific and technological aspects.
ENR7700	Watershed Ecology and Restoration	Fundamental ecological processes affecting streams, wetlands, and rivers at the watershed scale and the emerging roles of restoration and adaptive management in disturbed aquatic ecosystems.
ENR8150	Advanced Environment, Risk and Decision Making	Theory of individual and participatory risk-based decision making and applications to improve decision making in environmental and other risk-based management contexts.
ENR8350	Ecosystem Management Policy	Theory and practice of integrating natural and social science for managing watersheds, forests, and regions. Evolution of policies to address human-ecological systems. Service learning "lab".
ENR8400	Human Dimensions of Ecosystems Management	Provides an overview of interdisciplinary theories and frameworks for understanding and addressing environmental problems and natural resources management issues.
ENR8890.01	Fisheries and Wildlife Science Seminar	Seminar on special topics in fisheries and wildlife science in environment and natural resources.
ENR8890.02	Ecological Restoration Seminar	Seminar on special topics in ecological restoration in environment and natural resources.
ENR8890.03	Ecosystem Science Seminar	Seminar on special topics in ecosystem science in environment and natural resources.
ENR8890.05	Forest Science Seminar	Seminar on special topics in forest science in environment natural resources.
ENR8890.06	Environmental Social Sciences Seminar	Seminar on special topics in environmental social sciences in environment and natural resources.

ENTMLGY4601	General Insect Pest Management	Exploration of insect pests that affect crops, landscapes, public health, and domestic animals, and the biological, cultural, and chemical tactics used to manage them.
ENTMLGY5600	Principles and Applications of Integrated Pest Management	Overview of the principles of integrated pest management (IPM) of arthropod pests using an ecological approach, including examining how various management tactics can be used in an integrated manner.
ENTMLGY5601	Current Topics in Entomology, Science and Society	Capstone study of one timely issue intersecting science and society; critical and creative analysis of diverse standpoints and disciplines within and beyond agricultural and environmental sciences, including entomology and environmental toxicology.
ENTMLGY5800	Pesticide Science	Exploration of pesticide toxicology and practical use; modes of action in target organisms, regulations, application methods, environmental fate, resistance management, and use in integrated pest management programs.
ENTMLGY6701	Biodiversity Analysis for Ecosystem Sustainability and Resilience	A graduate level course covering techniques for assessing and quantifying biodiversity and ecosystem services through the use of insects and related organisms; students will measure biodiversity and ecosystem services in specified habitats.
ENVENG2100	Environmental Engineering Analytical Methods	Application of analytical methods to calculate, measure and interpret chemical characteristics of water, soil, and air.
ENVENG3080	Economic Evaluation and Optimization in Civil and Environmental Engineering	Fundamentals of engineering economics and optimization for civil and environmental engineering planning and design.
ENVENG3200	Fundamentals of Environmental Engineering	Quantitative assessment of water quality, air quality, and solid/hazardous waste management, with an emphasis on minimizing human health and environmental impacts through sustainable design.
ENVENG4090	Environmental Engineering Capstone Design	Culminating design course for the Environmental Engineering program. Must be taken as close to graduation as possible.
ENVENG5120	Bioremediation of Groundwater and Soil	An overview of biotechnology methods for remediation of groundwater and soils. Overview of theory and bio-remediation component design. Includes a study of the role of key microbial groups capable of transforming common contaminants in subsurface media.
ENVENG5170	Sustainability and Pollution Prevention Practices	An introduction to concepts of sustainability and pollution prevention with particular application to solid waste generation, disposal and management.
ENVENG5210	Advanced Physical Chemical Treatment Processes	Principles and design of physical and chemical processes for water and wastewater treatment including mixing, mass transfer, chemical kinetics, oxidation-reduction, disinfection, emerging contaminants, and water reuse.
ENVENG5310	Ecological Engineering and Science	Definition of ecosystems, ecosystem restoration, global warming issues. Practice of ecological engineering, and the utilization of natural processes to provide societal services.
ENVENG5410	Hazardous Waste Management and Remediation	Environmental regulations; handling of hazardous wastes; risk assessment; site remediation processes; remedial alternatives; implementation; case studies.
ENVENG5600	Science, Engineering, and Public Policy	Presents a history of the interactions between science, engineering, and public policy in the United States and in the context of global concerns (e.g. climate change, competitiveness), inquire into how various federal government, universities, & corporations.
ENVENG6200	Fundamentals of Environmental Engineering	Quantitative assessment of water quality, air quality, and solid/hazardous waste management, with an emphasis on minimizing human health and environmental impacts through sustainable design.
ESEPHL8410	Ethics and Education: Equality, Freedom, and Justice in Schools	Examines the moral dimensions of educational policy and practice. Topics of consideration will include school choice, educational equality and school funding, civic education, religious and cultural accommodations, and parent and student rights.
ESHESA2577	Crossing Boundaries: A Journey Towards Intercultural Leadership Identity Development	Builds on intellectual and experiential engagement with issues of difference, diversity, social justice, and alliance building.
FABENG2100	Energy In Biological Systems	An introduction to energy flow and transformations within and for biological systems that include the human environment and the production and processing of plants, animals and micro-organisms the student will encounter in the food, agricultural and biological systems.
FABENG2720	Principles of Soil and Water Engineering	Applications of hydrology, evapo-transpiration, open channel hydraulics, stream geomorphology, soil erosion and soil dynamics, and ecological engineering to problems in food, agricultural and biological engineering.

FABENG3510	Introduction to Biological Engineering	An integration of biology, biochemistry and engineering fundamentals for engineering applications in fermentation microbiology and biotechnology, and for analysis of natural biological systems.
FABENG3610	Utilization of Energy in Agriculture	Study of motive and stationary power needs in agriculture, mechanics of traction, characteristics and selection of power sources, power transmission, principles and design of hydraulic systems.
FABENG4567	Assessing Sustainability: Project Experience	Students gain experience in sustainability assessment by applying concepts and quantitative methods to evaluate environmental, economic, social, and technical sustainability of specific projects. EEDS major capstone.
FABENG4900	Capstone Design I	Engineering design approach in a team environment; practice in the design and communication of a specific system within the student's area of specialization. Must be taken during last full academic year in FABEng.
FABENG4910	Capstone Design II	Methodology of design in a team environment; practice in the design and communication of a specific system within the student's area of specialization. Continuation of Capstone Design I.
FABENG5310	Ecological Engineering and Science	Definition, classification, and practice of ecological engineering. Course explores ecological ecosystems, ecosystem restoration, and the utilization of natural processes to provide societal services and benefits to nature.
FABENG5320	Agroecosystems	Holistic analysis of agricultural systems. Application of energy analysis to evaluate and design sustainable agroecosystems.
FABENG5540	Biomass Conversion to Bioenergy	An exploration of the science and technologies used for energy production from bio-based materials, including agricultural biomass and solid waste sources.
FABENG5550	Sustainable Waste Management	A comprehensive examination of waste generation, treatment and reuse including the impacts of pollution on the environment and human health. The focus will be on agricultural residues, manure, domestic wastewater, and municipal solid waste streams.
FABENG5750	Stream Geomorphology and Watershed Hydrology	Fundamental and advanced topics in stream geomorphology and hydrologic processes. Solving multi-objective engineering problems in a team setting involving protection, enhancement, and restoration of streams, rivers, and watersheds.
FABENG5820	Environmental Controls and Air Quality	Heating, ventilation, and air conditioning (HVAC) engineering applied to agricultural, residential, and commercial structures; analysis of factors affecting energy utilization and air quality; green and sustainable HVAC technologies.
FCSED5691	Toward Just, Healthy, Secure Choices	Applying ethical and value principles to consider nutrition, safe and ecological food knowledge to healthy, environmentally sustainable food practice.
FDSCTE4510	Sustainability in the Food Industry	Critical topics and solutions for sustainability in the food processing industry including environmental, economic and technical issues throughout the food processing supply chain. Sustainability will be considered at the local, national and global level.
FDSCTE7810	Phytochemicals in Fruits and Vegetables to Improve Human Health	Provides students with current scientific knowledge about the role of phytochemicals in diet and increases the knowledge and awareness of successful cost effective integrated approaches to reduce the burden of chronic disease.
GEOG2100	Human Geography	Introduces students to the field of human geography; focus on real-world problems, such as migration, war, imperialism, environment, trade, conflict, inequality, and urbanization by applying key human geography concepts.
GEOG2400	Economic and Social Geography	Geographic analysis of relationships between society and economy; focusing on such issues as globalization, production and consumption, inequality and social difference.
GEOG2500	Cities and their Global Spaces	Globalization and urbanization; urban economies, spaces, and societies; function, form, and pattern in developed and developing world cities.
GEOG3597.01	World Urbanization	An examination of geographic aspects of the urbanization process in the world's major regions; interrelationships between urbanization and economic development.
GEOG3597.02	Integrated Earth Systems: Confronting Global Change	Introduction to numerous global change issues through the exploration of the integrated Earth system; problem-solving strategies within an interdisciplinary team environment.
GEOG3597.03	Environmental Citizenship	Provides tools for environmental citizenship by teaching interdisciplinary perspectives on biophysical and sociocultural forces that shape environments. Addresses general processes through local case studies.
GEOG3702	Life and Death Geographies: Global Population Dynamics	Theories of population change; global and national contexts of fertility policy and reproductive health, morbidity and mortality trends; migration; environmental effects of population growth; urbanization.

GEOG3800	Geographical Perspectives on Environment and Society	Geographical understanding of interactions between society and environment; how historical and contemporary views of the environment influence people's actions toward the environment and other people.
GEOG3900	Global Climate Change: Causes and Consequences	Examines the natural and human factors that force changes in our climate and environment and explores strategies for a sustainable environment in the future.
GEOG5301	Sustainable Transportation	Sustainable transportation generates accessibility while minimizing harm to people and the natural environment. This course examines the problems associated with transportation, including climate change, air quality, non-renewable resources, safety, and congestion.
GEOG5402	Land Use Geography	Causes and consequences of recent regional and national land-use changes; urban decentralization, suburbanization of jobs and people; changing relationships between economic activity and the environment.
GEOG5501	Urban Spaces in the Global Economy	An examination of social, economic, cultural and political processes that produce urban space in local, national and global terms.
GEOG5502	The Neoliberal City	Neoliberal governance of cities affecting cultural, civic, and environmental politics; urban geographies of difference; politics and social economy of global cities; the uneven landscape of access and opportunity; shadow governance; and the built form.
GEOG5503	Urban China: Space, Place and Urban Transportation	Examines geography of China's urban transformations since 1911. Topics include: politics of urban design, political economy of land development, place-making projects, suburbanization, and consumption and spectacle.
GEOG5751	New Worlds of Latin America	Exploration of ongoing debates about achieving socially equitable and environmentally sustainable change in Latin America; emphasizes case studies and personal narratives from the lowland tropics.
GEOG5801	Environmental Conservation	Conservation of nature; nature-society theory; conflicts around environmental change and contemporary conservation programs and strategies.
GEOG5802	Globalization and Environment	Transnational dimensions of changes to the natural environment; ways that global economic activity, international institutions, and global environmentalism contribute to environmental problems and solutions.
GEOG5900	Weather, Climate, and Global Warming	An introduction to the fundamental physical and mathematical principles governing both day-to-day weather and the average of weather, or climate. Objectives are to understand the physical processes of the earth-atmosphere system.
GEOG8800	Seminar in Environment and Society	The development of theory in environment and society and its application to selected problems.
GEOG8896	Interdepartmental Seminar in Polar and Alpine Studies	A seminar on selected topics involving anthropology, biology, climatology, exploration, geology, glaciology, microbiology, and soils.
GEOG8902	Applied Climatology	Analysis of climatic and environmental change on various time scales; human impact on climate; theory and application of long-range and climate forecasting.
GEOG8950	Dynamic Climatology	Dynamics, thermodynamics, energy conservation, flows, conversion processes; large scale circulation patterns with particular emphasis upon turbulence at the synoptic scale; weather processes; regional climates.
HCS1100	Exploring Sustainable Plant Sciences and Prof Golf Mgt	Basic understanding of the global trends within sustainable plant systems and professional golf management, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.
HCS2200	Science of Sustainable Plant Production	Study of the cultivation, environmental, genetic, and social/cultural factors which influence the sustainable production of plants for food, fiber, ornamental and recreational uses.
HCS2201	Ecology of Managed Plant Systems	Origin, diversification, and biogeography of plants inhabiting managed landscapes.
HCS2305	Organic Gardening	An overview and assessment of organic gardening practices for sustenance and recreation.
HCS2306	Sustainable Vegetable Production Practicum: Planning, Growing and Marketing	Provides students with an introduction to small-scale vegetable farm planning and management through consideration of plant growth and production, farm design, farm management and operations, and produce marketing.

HCS2401	Sustainable Landscape Design I	An introduction to sustainable landscape design for residential and small scale properties with an emphasis on principles of design and graphic communication.
HCS3401.02	Environmental Horticulture Organizations	Two-day course comprised of visits to several "green industry" locations including nurseries, landscape design, public and private gardens and allied businesses.
HCS3410	Sustainable Landscape Maintenance Practices	An integrated approach to the sustainable maintenance of constructed landscapes - residential, commercial, and institutional, combining research based knowledge with field experience in maintenance practices.
HCS3522	Sustainable Irrigation and Fertigation Systems	Introduction to the basic concepts of irrigation and fertilizer injector (fertigation) systems as components of sustainable plant systems.
HCS4191.01	Sustainable Plant Systems Major Internship	Gives students an overview of the variety of internships available as well as their importance in career selection. Students will rate their internships on their educational value and help comprehend post graduation HCS career options.
HCS4600	Capstone	Examination of issues related to economic viability, social and ethical responsibility, environmental compatibility, and production efficiency of HCS-related enterprises to prepare students for transition from university to workplace.
HCS5306	Sustainable Vegetable Production Practicum: Planning, Growing and Marketing	Provides students with an introduction to small-scale vegetable farm planning and management through consideration of plant growth and production, farm design, farm management and operations, and produce marketing.
HCS5401	Sustainable Landscape Design II	Students synthesize the knowledge and skills learned in previous course work to achieve a command of the skills necessary to practice Sustainable Landscape Design.
HCS5450	Vegetable Crop Production and Physiology	A physiological and ecological study of the principal vegetable crop species grown for processing and fresh market use. The impacts of integrated crop management and other production systems on vegetable yields and quality are also considered.
HCS5460	Fruit Crop Physiology and Production	Sustainable fruit crop production principles/practices and their physiological bases as affected by environmental and economic factors.
HCS5602	The Ecology of Agriculture	Examines the key ecological and evolutionary processes at work in agricultural systems and the ways those processes interact with human systems.
HCS5630	Seed Production: Domestic & International Perspectives	The study of seed production principles (from flowering/fruit set through seed quality assessment and seedling establishment) from a physiological and ecological perspective.
HCS5670	Golf Courses and the Environment	Principles and practices of golf course design for sustainability.
HCS5730	Seed Ecology and Physiology	Study of the principles of seed ecology and the role of seed banks and seedling regeneration in natural and managed plant communities.
HCS7821	Environmental Physiology of Managed Plant Systems	An advanced study of the interaction of cultivated plants with their environment.
HCS7830	Phytochemicals in Human Health: Crops to the Clinic	Covers the function and control of phytochemicals in plants, the function of phytochemicals in human health, delivery of phytochemicals through foods in the diet, strategies when designing studies examining foods for health, and policy and sustainability.
HCS2201E	Ecology of Managed Plant Systems	Origin, diversification, and biogeography of plants inhabiting managed landscapes.
HISTORY2700	Global Environmental History	Global overview of the ecology of the human condition in past time, stressing climate change, earth systems, technology, energy, demography, and human cultural-economic revolutions.
HISTORY3700	American Environmental History	The history of American ecosystems from the last Ice Age to the present; focuses on historical debates over the causes and consequences of environmental change.

HUMNNT7830	Phytochemicals in Human Health: Crops to the Clinic	Covers the function and control of phytochemicals in plants, the function of phytochemicals in human health, delivery of phytochemicals through foods in the diet, strategies when designing studies examining foods for health, and policy and sustainability.
INTSTDS3850	Introduction to Globalization	Analysis of globalization in its various aspects, economic, political, environmental and technological, as well as of its extent and desirability. Prereq: Soph standing or above, or permission of instructor.
INTSTDS4320	Energy, the Environment, and the Economy	Examines the economic implications of climate change and climate change policies for society, including discussion of major state, federal, and international legislation.
INTSTDS4532	Food Security and Globalization	Examination of the causes and solutions for food insecurity. Global and local factors that affect access to food are also considered.
INTSTDS4535	International Economic Development	Study of the growth and diversification of developing economies and the causes of poverty and inequality. Analyze the impacts of human capital formation, markets and public policy on development.
INTSTDS4536	Economic Development of Sub-Saharan Africa	Issues shaping economic development and stagnation in contemporary Africa such as population growth, agricultural development, industrialization, trade, structural adjustment and environmental issues.
INTSTDS4560	Cooperation and Conflict in the Global Economy	The economic, social, and political bases for, and responses to, increasing global economic integration.
INTSTDS4597.01	Food, Population, and the Environment	Issues related to world-wide population increases, food production, and associated environmental stress; policy options for lessening these concerns, especially in low-income countries.
INTSTDS4597.02	Antarctic Marine Ecology and Policy	Historical and contemporary evaluation of Antarctic resource management and its scientific basis.
INTSTDS4320E	Energy, the Environment, and the Economy	Understand the role of energy in the economy and the environment. Explore the economics of clean, renewable energy, and understand the different policies for pollution control.
ISE5450	Industrial Ecology	Introduction to the status of resources, principles and methods of life cycle assessment, environmentally conscious product and facility design, production and recycling methods.
ISE5463	Manufacturing of Energy Systems	Teaches the design, manufacture and integration of conventional and renewable energy systems including their environmental impact.
ISE5870	Resilience Engineering	Provides a comprehensive treatment of Resilience Engineering tools to measure, manage, and design complex systems to be resilient in the face of surprising disrupting events.
LARCH2600	Outlines of Landscape Architecture: Visual Literacy in the Built Environment	Overview of patterns and processes of human design on land in relation to environmental, economic, and socio-cultural forces, with an emphasis on interpretation of visual landscape change.
LARCH2920	Design Studio II: Site Dynamics	Introduction to basic principles and qualities of landscape architectural design, with a focus on the dynamic interaction of environment and people at site scale within the typological framework of gardens and parks.
LARCH3189	Landscape Architecture Ecological Field Explorations	Observation and field investigation of the diverse landscape ecologies of Ohio and the region.
LARCH3597	Sustainability & You	Perspectives on social, environmental, and economic sustainability as it relates to landscape within a global context; problem-solving strategies within an interdisciplinary team environment.
LARCH3940	Design Studio IV: Landscape Ecology & Planning	Synthesis of landscape ecology and urban ecology principles with landscape planning and design at the district, watershed and/or regional scale, with a focus on integration of advanced inventory and analysis methodologies.
LARCH3950	Design Studio V: Design in Detail	Processes and techniques of design development, detailing and documentation, with a focus on sustainable design practices. Prereq: 3940 (633 and 356). Not open to students with credit for 658.

LARCH4960	Design Studio VI: Urbanism	Advanced landscape design and planning in relation to sustainable urbanism.
LARCH4970	Design Studio VII: Synthesis	Advanced landscape architectural research, design and planning synthesizing diverse scales, with an emphasis on interdisciplinary engagement.
LARCH6920	Design Studio II: Dynamic Systems	Synthesis of landscape ecology and site planning principles at the community and/or watershed scale, with a focus on integration of advanced inventory and analysis methodologies.
LARCH7930	Design Studio III: Urban Landscape	Design of the urban environment in relation to sustainable urbanism principles and practices.
LARCH7940	Design Studio IV: Global Issues	Advanced graduate landscape architectural research, design and planning synthesizing diverse scales, with an emphasis on international and interdisciplinary engagement.
LARCH7950	Design Studio V: Design in Detail	Processes and techniques of landscape architectural design development, detailing and documentation, with a focus on sustainable design practices.
LARCH2600E	Outlines of Landscape Architecture: Visual Literacy in the Built Environment	Overview of patterns and processes of human design on land in relation to environmental, economic, and socio-cultural forces, with an emphasis on interpretation of visual landscape change. Honors section.
LARCH3597E	Sustainability & You	Perspectives on social, environmental, and economic sustainability as it relates to landscape within a global context; problem-solving strategies within an interdisciplinary team environment.
LAW8309	Environmental Law	Federal environmental legislation, regulations, and judicial interpretation, including Natural Environmental Policy Act, the Clean Air Act, the Clean Water Act, and the Solid Waste Act, as amended.
LAW8310	Energy Law	An introduction to domestic energy law, focusing on the legislative and regulatory framework for electricity and the challenges associated with diversification of energy sources.
LAW8311	Climate Change Law	Explores the legal, political, and scientific challenges involved in addressing and responding to climate change, including international strategies and U.S. law and policy.
LAW8896.15	Seminar: Social and Environmental Litigation	Study of impact of law on social and environmental problems with emphasis on procedure and choice of remedies.
MBA6260	Global Environment of Business-EMBA	Political, economic, social and technological forces shaping today's global business environment.
MECHENG4904.0	ME Capstone Design II: Humanitarian Projects	Second course of 2-semester capstone sequence. Students work on design problems that have a humanitarian focus. Emphasis on problem definition, requirements, and design proposal.
MECHENG7383	Electrochemical Energy Conversion and Storage Systems for Automotive Applications	Electrochemical energy storage (batteries) and conversion (fuel cells) systems for automotive applications covering state of the art principles of operations and modeling.
MECHENG7384	Energy Modeling, Simulation, Optimization and Control of Advanced Vehicles	Fundamentals of advanced propulsion vehicles (HEV, PHEV, BEV, FCV), covering motivation, architectures, taxonomy and components, energy analysis, modeling, simulation, optimization and supervisory control/energy management principles.
MECHENG7761	Optimum Design of Machines and Structures	Application of optimization techniques to mechanical systems and structures. The structures considered will typically be high performance structures such as in aircraft and spacecraft.
MICRBIO3300	The Biology of Pollution	A general consideration of the interactions of environmental pollutants and biological systems.
PHILOS2342	Environmental Ethics	Examination of the moral issues generated by the impact of human beings on the natural environment.
PHYSICS1104	World of Energy: Light, Thermodynamics, Energy Sources	An examination of the various forms of energy and energy production with its personal and global impact. Uses the hands-on discovery mode of instruction. Intended for non-science majors.

PHYSICS2367	Uses of Science in Solving Problems of Society	Energy, environment, and the arms race are examined using the methods of science; focuses on interaction of science and technology; and social and ethical implications of choices.
PLNTPH2001	Sick Plants and a Hungry World	Review of the interactions of plants with plant pathogens and the social, economic, and historic consequences for civilization. Entirely online course.
PLNTPH4597	Societal Issues: Pesticides, Alternatives, and the Environment	Contemporary, cultural, and social issues related to pesticide use, genetic engineering and sustainable plant management.
PLNTPH5110	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	Overview of major pathogens and insects affecting health of forest and shade trees with emphasis on diagnosis, ecology, and management. Video-linked to Wooster.
POLITSC1105	American Political Controversies	Contemporary challenges to fulfilling the promise of American democracy, including such issues as poverty, discrimination, education, health, environment, and public participation.
POLITSC1300	Global Politics	Cooperation and conflict in world politics. Covers basic theories of international relations and key issues, including security, political economy, international organizations, and the environment.
POLITSC3460	Global Justice	Examines the idea of justice between states and among the people of the world. What would a just world look like? How should we live in our unjust world? Current debates about war, the environment, diversity and poverty will be considered.
POLITSC4190	Political Decision Making and Public Policy	Analysis of decision-making processes considering welfare, education, economic, and environmental policy.
POLITSC4335	International Environmental Politics	Theories and debates over sustainable development, environment, and security, and effectiveness of international regimes with a focus on international fisheries management and global climate change.
PSYCH5620	Technology, Efficiency, and Happiness	Considers various dimensions for evaluating the behavioral effects of any technology: efficiency, safety, time cost, complexity, environmental impact, social impact.
PUBAFRS5890	US Food Policy	An examination of national food affairs and policy at the federal level. Attention will focus on contemporary policy issues including food insecurity, health claims, obesity, novel crops, ingredients and processing techniques, and sustainability.
PUBAFRS5900	Food System Planning and the Economy	Examines the social, environmental and economic costs and benefits of our food production, distribution, and consumption.
PUBAFRS7500	Energy Policy and the Environment	Provides an historical and broad policy perspective on energy policy, energy resources and use, environmental protection, energy regulation, renewable resource economics, CO2 emission reduction strategies, and other issues.
PUBAFRS7531	Economic Development Policy	Takes a practical approach to the legal, policy and business issues related to urban redevelopment. Gain a legal perspective as they investigate business and public policy issues surrounding redevelopment in our urban core.
PUBHEHS3310	Current Issues in Global Environmental Health	Fundamental concepts and principles of environmental health are presented through a critical review and discussion of current issues in global environmental health.
PUBHEHS3320	Fundamentals of Environmental Health Risk Assessment	The scientific process used by governmental agencies to evaluate public health threats due to environmental contamination. An orientation to the fundamental and applied components of risk assessment.
PUBHEHS5320	Climate Change and Human Health	Recognize current controversies about climate change, summarize the evidence about climate change on human health, and identify major human diseases associated with climate change.
PUBHEHS6310	Principles of Environmental Health Science	Survey of environmental influences on human health and strategies for prevention considering source emissions, environmental fate and transport, human exposure, dose, and biological effects.
PUBHEHS6315	Advanced Environmental Health Science	Survey of environmental influences on human health and strategies for prevention considering source emissions, environmental fate and transport, human exposure, dose, biological effects, and ultimately disease associated with exposure.
PUBHEHS6320	Global Health and Environmental Microbiology	Fundamentals and emerging issues of health significant microorganisms (bacteria, viruses, protozoa) from water, air, soil and food, and their sources, transmission routes, treatments, detection methods and study tools.

PUBHEHS7340	Environmental Law and Policy for Public Health	Basic concepts of environmental law and policy relevant to public health practice.
PUBHEHS7345	Principles of Environmental Health Management	Survey of major environmental factors affecting human health, including air, water, and land pollution, occupational hazards, heavy metals, chemical carcinogens, radiation and noise.
PUBHEPI7411	Epidemiology in Environmental Health	Principles and application of epidemiologic methods in the investigation and control of health problems stemming from environmental hazards.
PUBHHBP7558	Social-Ecological Strategies in Prevention	Community health promotion strategies using policy, systems, and environmental change perspectives.
RELSTDS2677	Religion and Environmentalism	Examines the complex intersections between religion and environmental movements in North America, beginning with early contact between Europeans and Native Americans.
RURLSOC5530	Sociology of Agriculture and Food Systems	Overview of sociological theory and research related to agricultural change and food system development, focusing on individual, family, farm, community and environmental impacts.
RURLSOC5540	Population, Place and Environment	Focuses on demographic issues in rural settings and related environmental issues, with an emphasis on population change and migration in the context of conflicts, disaster, and resource based development.
RURLSOC7560	Environmental Sociology	Sociological approaches to the study of environmental policy. Analysis of major issues relating to the use and abuse of natural resources and pollution.
SOCIOL3306	Sociology of Poverty	A study of low-income peoples, especially concerning the effect of poverty on them, and their consequent social participation.
SOCIOL3460	Environmental Justice	Examines environmental issues from a sociological perspective, especially human causes of environmental change such as technology, population, and consumption, and social reactions.
SOCIOL3597.01	World Problems in Global Context	Sociological analysis of contemporary world societies - non-industrialized, industrializing, and industrialized - with special attention to major social institutions and patterns of social change.
SOCIOL3597.02	World Population Problems	General introduction to population studies, emphasizing how population growth and structure have caused or aggravated social problems in various countries.
SOCIOL4606	Social Movements and Collective Behavior	An examination of theories and research on non-traditional group efforts to change social systems and institutions; emphasis on contemporary societies and movements.
SOCIOL7758	Population, Health, and Life Course	Social and demographic forces that affect well being, health, and survival.
SOCIOL7762	Comparative Social Inequality	Using historical and cross-national approaches, two aspects of social inequality are examined: class relations and the distribution of goods.
SOCWORK6201	Social and Economic Justice	Foundation knowledge related to social justice in the context of social welfare in advancing human rights of all people.
SOCWORK8501	International Issues in Social Work Practice and Social Development	Focuses on the multidimensional and dynamic local, national, regional and international contexts and issues that help shape human welfare and social development in various parts of the globe.
SPANISH2798.12	Globalization in the Mayan Country. History, Culture, Tourism, and the Environment in the Yucatan	The Yucatan offers a unique scenario in the Americas in which relevant issues of socio-economic development; preservation of archeological or historical sites; protection of the environment; and reinvigoration of Indigenous culture.
STAT2510.02	Statistics in the Environmental Sciences	Learn, discuss, and apply statistical methods to important problems in the environmental sciences. Statistical techniques will be introduced and illustrated through applications in climate change, pollution monitoring, and biodiversity/conservation.

STAT6620	Environmental Statistics	Survey of statistical methods for environmental data, with a focus on applications. Topics include sampling, regression, censoring, risk analysis, bioassay, time series, spatial statistics, and environmental extremes.
VETPREV7723	Biosecurity, Environmental Health, and Other Veterinary Public Topics	Overview of biosecurity (bioterrorism, preparedness, management of zoonotic outbreaks), environmental health issues related to human and animal interactions, and other topics concerning veterinary public health.
WGSST3530	Women, Environment and Development	Interdisciplinary study of women's roles as environmental stewards and in resource-based development in global context. Attention given to gender differences in environmental and rural practices.

FullName	Title	Description
AEDECON1100	Exploring Agribusiness and Applied Economics	Basic understanding of the global trends within agribusiness and applied economics, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.
AEDECON2005	Data Analysis for Agribusiness and Applied Economics	Introductory course in data analysis, stressing computer applications of probability and statistics, problems of data gathering, presentation, and interpretation in economics and business. Prereq: Math 1130 (130) or 1131 (131) or 1148 (148) or 1150 (150)
AEDECON3101	Principles of Agribusiness Management	Introduction to agribusiness management principles and skills in the context of the four functions of management: planning, organizing, directing, and controlling. Prereq: 2001 (200) or 2001H (201H) or Econ 2001 (200) or 2001H (200H). Not open to student
AEDECON4002.0	Econometric Applications in Agribusiness and Applied Economics	Quantitative models and methods and their application to agricultural, environmental, and development economics and agribusiness. Prereq: 2005 (205) or AEE 387 or AnimSci 2260 (260) or ComLdr 3537 or HCS 2260 (260) or Stat 1430 (133) or 1145 (145); and
AEDECON4002.0	Operations Research in Agribusiness and Applied Economics	Quantitative models and methods and their application to agricultural, environmental, and development economics and agribusiness. Prereq: 2005 (205), ComLdr 3537 (AEE 387), HCS 2260 (260), AnimSci 2260 (260), Stat 1145 (145), or 1430 (133); and AEDEcon 2
AEDECON4003	Economics of Public Policy Analysis	Understanding of economic tools and concepts for analyzing public policies important to the food industry, agriculture and natural resources. Prereq: 2001 (200) or 2001H (200H) or Econ 2001 (200) or 2001H (201H); and Math 1131 (131 [Wi 03 or thereafter])
AEDECON4106	Strategic Management	Experiential learning and managerial economics applied to strategic management in agribusiness. Formulate managerial strategies in a competitive environment constrained by the firm's products, internal resources, market segments, and supply chains. Prereq:
AEDECON6010	Applied Economics I	Theories of production, consumption, and finance and their application to the exchange of agricultural and environmental goods and services. Prereq: 4001 (500) or Econ 4001 (501). Not open to students with credit for 711.
AEDECON6020	Applied Economics II	Theories of social welfare, market failure, and public goods and their application to issues in agricultural, environmental, and development economics. Prereq: 6010. Not open to students with credit for 713.
AEDECON6110	Applied Quantitative Methods I	Application of econometric and time series method to the analysis of problems in agricultural, environmental, and development economics. Prereq: 4001 (500) or Econ 4001 (501), and 2005 (205) or Stat 1430 (133). Not open to students with credit for 701.
AEDECON6120	Applied Quantitative Methods II	Application of mathematical programming and statistical methods to the analysis of problems in agricultural, environmental, and development economics. Prereq: 4001 (500) or Econ 4001 (501), and 2005 (205) or Stat 1430 (133). Not open to students with cre
AEDECON6200	International Economics and Policy	Application of economic theory and methods to current problems in international economics, policy and trade. Prereq: 4001 (500) or Econ 4001 (501). Not open to students with credit for 734.
AEDECON6300	Environmental and Resource Economics	Application of economic theory and methods to current problems in environmental and resource economics. Prereq: 4001 (500) or Econ 4001 (501). Not open to students with credit for 831.
AEDECON6400	Regional and International Development	Application of economic theory and methods to current problems in regional and international economic development. Prereq: 6010 or 4001 (500), or Econ 4001 (501). Not open to students with credit for 833.
AEDECON7110	Advanced Quantitative Methods I	Application of advanced mathematics and mathematical optimization methods to problems in agricultural, environmental, and development economics. Prereq: 4001 (500) or Econ 4001 (501).
AEDECON7120	Advanced Quantitative Methods II	Theoretical formulation and numerical analysis of stochastic dynamic models in agricultural, environmental, development and financial economics. Prereq: 4001 (500) or Econ 4001.01 (501.01).
AEDECON7130	Applied Econometrics I	A rigorous introduction to techniques of econometric analysis with applications to empirical problems in agricultural, environmental, and development economics. Prereq: 4001 (500) or Econ 4001 (501). Not open to students with credit for 801.
AEDECON7140	Applied Econometrics II	Special topics pertaining to the application of econometric methods to empirical problems in agricultural, environmental, and development economics. Prereq: 7130 and Econ 8712 (804), or equiv.
AEDECON7310	Advanced Environmental Economics	Application of advanced economic theory and methods to the allocation of environmental goods and services. Prereq: Econ 8712 (804). Not open to students with credit for 831.
AEDECON7420	Advanced Development Economics	Application of advanced economic theory and methods to problems of international economic development. Prereq: Econ 8712 (804). Not open to students with credit for 833.
AEDECON7421	Advanced Development Economics I	Application of advanced economic theory and methods to problems of international economic development. Prereq: Econ 8712 (804). Not open to students with credit for 840.

AEDECON7425	Advanced Development Economics II	Application of advanced economic theory and methods to problems of international economic development. Continuation of AEDEcon 7421. Prereq: Econ 8712 (804). Not open to students with credit for 840.
AEDECON8200	Frontiers of AED Economics	Critical discussion of seminal and innovative scholarly research in agricultural, environmental, and development economics. Prereq: Not open to students with credit for any 899-series course. This course is graded S/U.
AEDECON8200	Frontiers of AED Economics	Critical discussion of seminal and innovative scholarly research in agricultural, environmental, and development economics. Prereq: Not open to students with credit for any 899-series course. This course is graded S/U.
AEDECON8800	Seminar in AED Economics	Critical discussion of current academic research in agricultural, environmental, and development economics. Prereq: Grad standing in AEDEcon. This course is graded S/U.
AEDECON8800	Seminar in AED Economics	Critical discussion of current academic research in agricultural, environmental, and development economics. Prereq: Grad standing in AEDEcon. This course is graded S/U.
AEDECON8890	Workshop on Research Methods	Preparation of research manuscripts in agricultural, environmental, and development economics. Prereq: PhD standing in AEDEcon, and permission of instructor. This course is graded S/U.
AEDECON8895	PhD Research Seminar	PhD Students presenting and discussing research in agricultural, environmental, and development economics under the guidance of an instructor. This course is graded S/U.
AEE7420	Emerging Trends and Issues in Agricultural and Extension Education	Participants in this course will gain an understanding of global issues and trends facing contemporary agricultural and extension organizations, communication and leadership. Repeatable to a maximum of 4 cr hrs.
AEROENG2405	Thermodynamics	Aerospace engineering thermodynamics: Introduction to the concepts of energy and entropy, the First and Second Law analysis of systems and control volumes, and the analysis of power and refrigeration cycles. Prereq: 2200 (200), and AeroEng-BS student (No
AEROENG3543	Flight Vehicle Structures II	Energy Based Analysis: principles of virtual work and minimum potential energy; rayleigh-ritz & finite element methods; structural stability; thermo-elasticity; structural dynamics; laboratory demonstrations. Prereq: 3542 (342), and enrollment as AeroEn
AEROENG8802	Advanced Mathematical Methods in Engineering	Fourier series, complex differentiation and integration and transform and Green's function methods for solution of problems arising in heat transfer, vibrations, fluid mechanics; asymptotic analysis and singular perturbations. Prereq: Not open to studen
AFAMAST8850	Consumer Culture, Race and Modernity	Acquaints students with critical theoretical perspectives on the social and cultural history of consumer culture in the West, linking it to the rise of capitalism, industrialization, imperial and neo-liberal globalization. Prereq: Grad standing.
AFAMAST5189S	Community Development: Field Research and Seminar	A service-learning course that draws on the principles of experiential learning by immersing students in an organized service activity that meets identified community needs. Prereq: 1101 or 2101, and permission of course coordinator. Repeatable to a maxi
AFAMAST6189.0	Community Service	A two part course in experiential learning. The course involves practical work with a community based organization. Prereq: 7756. Not open to students with credit for 710.01. This course is progress graded (S/U).
AGRCOMM2367	Agricultural Issues in Contemporary Society	This course helps students develop a critical understanding of agricultural, environmental and related issues facing the United States and the world while improving their writing skills. This is a second writing course. Prereq: First writing course. Not
AGRCOMM5135	Agricultural Feature Writing	This is a laboratory course where students will apply skills learned from earlier journalism courses to produce the AgriNaturalist, a student publication of the College of Food, Agricultural, and Environmental Sciences. Prereq: 4130 (300), Comm 2221 (421
AGRCOMM5150	Communication Strategies for Change and Development	Examines communication competencies needed by development and social change practitioners. Prereq: Jr or Sr standing, or permission of instructor. Not open to students with credit for 650.
AGRCOMM5530	Advanced Agricultural Communication Technology	Course is designed to further introduce students to practices and techniques used in computer-based electronic production when preparing informational and educational messages for public and student audiences in agriculture and natural resources. Prereq:
AGSYSMT1100	Exploring Agricultural Systems Management	Basic understanding of the global trends within agricultural systems management, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.
AGSYSMT2310	Electrical Systems for Agricultural and Residential Applications	Principles, design and installation of systems and components essential for generation, distribution and control of electricity for power, heat, motors and illumination in residences and agricultural structures. Prereq: Math 1148 (148), and Physics 1103

AGSYSMT2370	Environmental Hydrology	Principles of hydrology applied to agricultural and forest watersheds, including applications in drainage, erosion, irrigation, water supply and water quality. Prereq: Not open to students with credit for AgSysMgt 370. This course is available for EM cre
AGSYSMT3232	Engines and Power Transmission	Principles of engine theory, operation, maintenance, and repair. In addition, alternative fuels, engine design and basic power transmission will be explored. Prereq: Math 1130 (130) or 1148 (148), and Physics 1103 (103), 1200 (111), or 1250 (131); or enr
AGSYSMT3320	Facilities for Agricultural and Greenhouse Production	Building and equipment design for livestock, crop and greenhouse production; selection and specification of construction materials and ventilation systems. Prereq: Math 1148 (148), and Physics 1103 (103), 1200 (111), or 1250 (131). Not open to students w
AGSYSMT4300	Engineering Applications in Agriculture	Engineering and technology applications essential to the operation, selection and management of the processes, machinery, structures, soil and water, and materials handling systems in agriculture. Prereq: Math 1130 (130) or 1148 (148). Not open to studen
AGSYSMT4580	Precision Agriculture	Introduction to the principles and technologies of precision agriculture including: Global Positioning System (GPS), guidance systems, plant and soil sensors, soil sampling, yield mapping and related technologies. Prereq: Not open to students with credit
AGSYSMT5600	Agricultural Safety and Health	Develops the knowledge, awareness and attitude necessary to becoming an effective safety manager in a non-traditional occupational environment. Includes hazard identification and mitigation; safety education, engineering, and enforcement strategies. Prer
AIRSCI4001	Air Force Defense Studies I	Course examines the political, economic and social constraints upon national security and defense structure. The role of the military including joint operations is discussed. Regional defense issues studies. Prereq: 1001, 1002, 2001, 2002, 3001, and 3002
ANIMSCI2100	Appreciation of Companion and Production Animals	Overview of the size and scope of companion and production animal systems, economic impact of animals and their products, and influences on our habits, behaviors, actions, and environment. Prereq: Not open to students with credit for 245 and 250.
ANIMSCI2367	Animals in Society	Introduction to the historical, social, cultural, economic and legal frameworks within which current human-animal relationships have evolved. Prereq: English 1110 (110) or 111, or equiv. Not open to students with credit for 240. GE writing and comm: leve
ANIMSCI2400.05	Human and Animal Interactions	Students will expand their understanding of the role that animals play in shaping society, culture, and economics within the US and the non-US destination identified in the 3797.02, 3797.03, or 3797.04. This course has 3 required Saturday field trips. Pr
ANIMSCI2400.07	Global Dairy Industries	An opportunity for students to study the culture; political, economic, and social framework; and dairy industry of another country. This course is offered in conjunction with AnimSci 3797.07 - Dairy Industry Outside the US. Concur: 3797.07. Not open to s
ANIMSCI2507	Challenges and Opportunities for the Dairy Industry	Increase the understanding by students to the challenges and opportunities within the Ohio and US dairy industries. As the economic climate changes and the consumer demands shift, the dairy industry must respond. Prereq: 2200.01 (200) or 2300H (200H). No
ANIMSCI3133	Principles of Feeds and Feeding	A study of the chemical composition of feedstuffs and the application toward providing optimal nutrition to managed animals. Prereq: 3130.
ANIMSCI3797.07	Dairy Industry Outside the U.S.	Increase the understanding of undergraduate students to the global nature of the dairy industry, comparing the demographics, cultural and economic forces, and natural resource availability on dairy farming and milk processing in a global setting. Prereq
ANIMSCI4003	Swine Production	Application of science and basic principles of nutrition, physiology, genetics, health, economics, meats, and housing in integrated management systems for modern swine production. Prereq: 3130 (330), and 3140 (310) or 3140H (310H), and 3150 (320). Prereq
ANIMSCI4400	Animal Welfare and Behavior in Livestock Industries	The study of animal welfare and behavior and resulting influences on livestock production systems. Prereq: 3140 (310) or 3140H (310H), or permission of instructor.
ANIMSCI5797.03	History, Culture and Economies of Australia	Introduces students to key social, political and economic issues that have shaped Australia to its contemporary identity and to investigate issues of exploration, economic development, social and community standards and processes. Prereq: Permission of i
ANIMSCI6090	Anaerobic Microbiology	Provides an understanding of fundamentals of anaerobic microbiology and applications to animal and human nutrition and bioenergy production. Prereq: Micrbio 4100 or 4000, and Biochem 4511; or permission of instructor. Not open to students with credit for

ANIMSCI7620	Food and Nutritional Toxicology	Overview of absorption, metabolism and excretion of xenobiotics, allergenic and toxic constituents, role of diet in mutagenesis and carcinogenesis, food processing induced toxins and procedures, and laws and regulation of safety assessment of foods. Prer
ANTHROP2100.0	Introduction to Physical Anthropology- Non-Lab	A scientific examination of humans as a biological and cultural organism based on primate evolution from living and fossil evidence; evolutionary theory and population adaptability. This course is used only for transfer credit. Prereq: Biology 1101 (101)
ANTHROP2100.0	Introduction to Physical Anthropology- Non-Lab Non-GE	A scientific examination of humans as a biological and cultural organism based on primate evolution from living and fossil evidence; evolutionary theory and population adaptability. This course is used only for transfer credit. Prereq: Biology 1101 (101)
ANTHROP2200	Introduction to Physical Anthropology	A scientific examination of humans as a biological and cultural organism based on primate evolution from living and fossil evidence; evolutionary theory and population adaptability. This course includes laboratory activities. Prereq: Biology 1101 (101) o
ANTHROP3301	Modern Human Physical Variation	Survey of modern human biological diversity; examination of the underlying evolutionary and adaptive mechanisms responsible; exploration of the interplay between biology and behavior in adaptation. Prereq: 2200 (200), or permission of instructor. Not ope
ANTHROP3410	Primate Conservation	An examination of the intrinsic and extrinsic factors putting lemurs, lorises, monkeys and apes at risk, and a critical evaluation of conservation strategies throughout their habitats.
ANTHROP3597.0	Crisis! An Anthropological Perspective of Global Issues	Analysis of cultural conflict in developing nations resulting from rapid and extensive technological and social change. Prereq: Not open to students with credit for 4597.01 or 597.01. GE soc sci indivs and groups and diversity global studies and cross-di
ANTHROP5602	Women's Health in Global Perspective	A cross-cultural comparison of the political, economic, social, and biological issues surrounding women's health. Prereq: 2200 (200), or permission of instructor. Not open to students with credit for 601.04.
ANTHROP5605	Environmental Archaeology	A survey of the principles, methods, and techniques of prehistoric environmental analysis; emphasis on understanding Pleistocene and Holocene environments as they relate to archaeology. Prereq: 3401 (401). Not open to students with credit for 602.03.
ANTHROP5622	Peasant Society and Culture	Comparative study of the history, cultural practices, social organization and economic strategies of the rural proletariat throughout the world. Prereq: 2202 (202) or equiv, or permission of instructor. Not open to students with credit for 620.03.
ANTHROP5626	More: Culture and Economic Life	An analysis of economic rationality in non-market and market societies; resource allocation, work organization, product disposition, exchange, money, trade, and development. Prereq: 2202 (202) or equiv, or permission of instructor. Not open to students w
ANTHROP7701	Advanced Topics in Physical Anthropology: Modern Human Physical Variation	Discussion of advanced topics in human variation and hominid evolution; emphasis on critical analysis and evolution of theoretical topics in research design. Survey of modern human biological diversity; underlying evolution and adaptability. Prereq: Not
ANTHROP7802	Origins of Food Production	Advanced theoretical and comparative study of the origins of food production in the Old and New Worlds. Prereq: Admission to Grad program. Not open to students with credit for 801.02.
ANTHROP7803	The Archaeology of Complex Societies	Advanced theoretical and comparative study of the rise and fall of complex societies in antiquity in the Old and New Worlds. Prereq: Admission to Grad program. Not open to students with credit for 801.03.
ANTHROP8892.0	Seminars in Physical Anthropology: Biocultural Medical Anthropology	Explores human reproduction from a biocultural and ecological perspective. Repeatable to a maximum of 27 cr hrs.
ARCH2300	Outlines of the Built Environment	Introduction to architecture, landscape architecture, and planning as cultural practices that shape the physical environment. Prereq: Not open to students with credit for 200, 1210, 2300E, LArch 1210 (200), 2300, or 2300E. GE cultures and ideas course. C
ARCH3410	Architectural Design III	Architectural design with an emphasis on materiality. Prereq: 2420 (243). Not open to students with credit for 341 or 342.
ARCH3420	Architectural Design IV	Architectural design with an emphasis on materiality. Continuation of Arch 3410. Prereq: 3410, or both 341 and 342. Not open to students with credit for 343.
ARCH3420.01	Architectural Design IV	Architectural design with an emphasis on materiality. Continuation of 3410. Part one of two with 3420.02. Prereq: 3410 (341 and 342). Not open to students with credit for 343.
ARCH3420.02	Architectural Design IV	Architectural design with an emphasis on materiality. Continuation of 3410. Part two of two with 3420.01. Prereq: 3410 (341 and 342). Not open to students with credit for 343.
ARCH5390	Topics in Social and Economic Factors in Architecture	Investigation of topics in social and economic factors in architecture. Prereq: Enrollment in Architecture major, or permission of instructor. Repeatable.

ARCH5590	Topics in Building Technology	Investigation of topics in building technology. Prereq: Enrollment in Architecture major, or permission of instructor. Repeatable.
ARCH5590.01	Topics in Building Technology	Investigation of topics in building technology. Prereq: Enrollment in Knowlton School of Architecture major, or permission of instructor. Repeatable.
ARCH5590.02	Topics in Building Technology	Investigation of topics in building technology. Prereq: Enrollment in Knowlton School of Architecture major, or permission of instructor. Repeatable.
ARCH5710	Introduction to Architectural Structures I	Statics, strength of materials, and structural systems: principles, elements, concepts. Prereq: Math 1118 (117) or 1151 (151), and Physics 1200 (111); or Grad standing in Arch, or permission of instructor. Not open to students with credit for 426, 616, 6
ARCH5810	Introduction to Environmental, Mechanical, and Electrical Systems in Architecture	Introduction to environmental issues and building service systems for architecture. Prereq: Math 1118 (117) or 1151 (151), and Physics 1200 (111); or Grad standing in Arch, or permission of instructor. Not open to students with credit for 661 or 662.
ARCH5960	Design Competition	Learn how to work in interdisciplinary teams to develop design proposals to solve problems in the natural or built environment. Prereq: Jr, Sr, or Grad standing. Repeatable to a maximum of 9 cr hrs or 3 completions. Cross-listed in CRPlan and LArch.
ARCH6090	Topics in Urban Design	Investigation of topics in urban design. Prereq: Grad standing, or permission of instructor. Repeatable.
ARCH6710	Architectural Structures II	Statics, strength of materials, and structural systems: principles, elements, systems. Prereq: Grad standing. Not open to students with credit for 618 or 724.
ARCH7310	Practice of the Design Professions	Legal, financial, technical, and ethical issues in architectural practice. Prereq: Enrollment in Master of Architecture Program. Not open to students with credit for 751 or 752.
ARCH7410	Advanced Architectural Design I	Architectural design with an emphasis on materiality and organization. Prereq: 6420 (643), or Enrollment in the Master of Architecture Graduate Program with advanced standing. Not open to students with credit for 841 or 842.
ARCH7420	Advanced Architectural Design II	Architectural design with an emphasis on materiality and organization. Continuation of Arch 7410. Prereq: 7410 (841). Not open to students with credit for 844.01.
ASE5230	Methods of Teaching in Agriscience Education	Examining the teaching and learning process with emphasis on planning and delivering agriscience instruction in public schools. Students will demonstrate competence in agricultural literacy instruction, and science-based agriculture instruction. Prereq:
ASE5281	Capstone in Agriscience Education	Clinical analysis of teaching agriculture in the public schools, conferences, and seminars. Prereq: 5230 and 5231. Not open to students with credit for AEE 580.02.
AVIATN3200	Aviation Regulations	Consideration and analysis of aviation regulatory environments and processes, such as regulatory certifications, rulemaking, and legislation. Maintenance, airports, aircraft, and operations. Law, environment, safety, security, and operations. Prereq or
AVIATN4400	Airport Management	Comprehensive study of airport operations and management; role of the airport manager in planning, finance, administration, public relations, socio-political and environmental considerations, and operational requirements and maintenance. Prereq: Aviatn
BIOCHEM5735	Plant Biochemistry	Focus on biochemical processes unique to plants, including photosynthesis, respiration, carbon fixation and carbohydrate metabolic networks, cell wall and lipid synthesis, and nitrogen and sulfur assimilation for macromolecular synthesis. Prereq: 4511 (5)
BIOLOGY1101	Introductory Biology	Basic principles of biology; topics include the nature of science, organismal diversity, evolution, ecology, genetics, reproduction, and cellular structure and function. Not intended students majoring in one of the biological sciences. Prereq: Not open t
BIOLOGY1102	Human Biology	Exploration of human biology; topics include structure and physiological function, reproduction and development, genetics and disease, ecology, and evolution. Not intended for students majoring in one of the biological sciences. Prereq: Not open to stude
BIOLOGY1113	Biological Sciences: Energy Transfer and Development	Exploration of biology and biological principles; evolution and the origin of life, cellular structure and function, bioenergetics, and genetics. A broad introduction to biology comprises both Biology 1113 and 1114. Prereq: Math 1130 (130), 1148, 1150,
BIOLOGY2100	Biological Analysis	A case studies approach to biology with emphasis on quantitative and systems analysis. Does not substitute for Biology 1113 or 1114 for majors in the Biological Sciences. Chem 1120 or 1250 and Math 1152 or 1172 recommended. Prereq: Math 1151, and Soph st
BIOLOGY3401	Integrated Biology	A case studies approach is used to gain a better understanding of biological concepts and principles. This course is designed for biology majors. Prereq: 1113 (113), 1114 (114), Chem 1220 (123), and Math 1150 (150), or permission of instructor. Not open

BIOMEDE3702	Measurements and Instrumentation Lab	Measurement and interpretation of data from living systems; measurement and analysis of signals generated by bioelectrical potentials, and their relationship to human physiology and function. Prereq: 2000, Stat 3460 or 3470, Anatomy 2220, and EEOB 3510;
BIOMEDE4901	Biomedical Engineering Capstone Design I	First course in a two-course BME capstone sequence. Introduction to design principles; challenges of biomedical device design; projects focus on helping persons with disabilities. Prereq: Sr standing in BiomedE. Concur: 4900. Not open to students with cr
BIOMEDE4902	Biomedical Engineering Capstone Design II	Second course in a two-course BME capstone sequence. Applying design principles; challenges of biomedical device design; engineering and testing devices that focus on helping persons with disabilities. Prereq: 4901, or permission of instructor. Not open
BMI5710	Introduction to Biomedical Informatics	A survey of biomedical informatics theories and methods employed in the design, implementation and management of information systems supporting basic science, clinical and translational research, clinical care, and public health. Recommended course work i
BMI7830	Systems Biology	Critical analysis of experiments in systems biology. Prereq: 730 or IBGP 705, or permission of instructor. Not open to students with credit for 830.
BSGP6700	Patient-Centered Research	Lectures and small group discussions will cover an introduction to humanistic aspects of medical research and human experimentation, including historical, socio-political, economic, and ethical aspects. Prereq: Enrollment in College of Medicine, and perm
BUSADM1101.01	Business Administration Seminar: Scholars	Seminar for first-year business scholars students to explore personal interests, interdisciplinary opportunities, campus and local community resources and activities related to business scholars program. Prereq: Admission to Business scholars program, an
BUSADM3531	Entrepreneurship and Innovation: General, Startup-Based Entrepreneurship	Transformation of knowledge captured through creative, person-centered design into conceptual, viable, commercial concepts in the area of product/service based general entrepreneurship and entrepreneurial start-ups. Examination of a variety of business mo
BUSADM3532	Entrepreneurship and Innovation: Corporate Entrepreneurship	Develop skills and understanding of theories and their application to develop new ideas and viable new businesses within an established firm. Address the development of an internal culture of innovation, processes for reviewing ideas and developing concep
BUSADM3533	Entrepreneurship and Innovation: Technology Entrepreneurship	Examine the innovative transformation of knowledge captured in scientific discoveries into conceptual, viable, commercial products and services. Prereq: 3510, and Design 2700 and MechEng or ISE 5682.
BUSADM4510	Entrepreneurship and Innovation: Practicum	Last required course in the Entrepreneurship and Innovation Minor. Application of tools and resources to real-world projects. Prereq: 3510 and 3531, 3532, 3533 or BusMHR 5530, and Design 2700, and MechEng or ISE 5682.
BUSFIN3400	Introduction to Real Estate	Examine the economics of property rights, the fundamental theories in urban economics, and selected applications. Prereq: Econ 2001.01 (200) or 2002.01 (201), and BusMhr 2292 (BusAdm 499.01). Not open to students with credit for 670.
BUSFIN4412	Real Estate Law	Basic legal aspects of property contracts, transactions, and environmental law. Prereq: 3220 (620), 3400 (670), 3500 (510), BusMgt 2320 (330), 2321 (331), and BusMHR 2292 (BusAdm 499.01). Not open to students with credit for 775.
BUSFIN6222	Global Financial Markets	Principles of how the Federal Reserve and its policies impact financial markets, the institutional environment of global financial markets, and the basics of the foreign exchange market. Prereq: Enrollment in SMB-Finance program. Not open to students wit
BUSMGT4237	International Operations Management	Current influences, practices and standards for structural and infrastructural decision making across national boundaries. Explores complexity of managing geographically dispersed operations with relationships between multiple entities. Prereq: 3230 (630)
BUSMGT7222	Simulation, Risk Analysis, and Decision Making	Focuses on analyzing management decisions that involve uncertainty, risk and complexity. Students will explore the Monte Carlo simulation, forecasting and decision tree analytical methods with a strong emphasis on their proper use and application. Prereq
BUSMGT7231	Manufacturing Planning and Control for Supply Chain Management	Emphasizes the overall structure of the planning and control function in managing operations, a critical link for the planning activities in many areas of a business. Topics covered include forecasting, sales and operations planning (S&OP), master product
BUSMGT7251	Managing Product and Process Innovation	An essential element of any business model is the design and the delivery of services and goods. Many organizations are able to perform this function effectively in the short-term. But only a few organizations demonstrate sustained performance over an ext
BUSMGT7252	Technology Management	Introduces the critical elements of designing and developing innovative products and services for strategic competitive advantage. Focus on tools, techniques and concepts necessary for designing, developing and managing innovation process. Prereq: Enroll
BUSMGT7255	Inventive Problem Solving	Enables today's students to use a new series of tools and techniques using a directed innovation methodology called TRIZ (pronounced "trees") also known as the Theory of Inventive Problem-Solving. The techniques learned will enable a student to find solut

BUSMGT7257	Data Analysis and Visualization	Designed to equip students with competencies in translating real-world problems into forms that such technologies can assist with, to portray/visualize these translations in ways that enhance the understanding of the dynamics of these problems, to struc
BUSMGT7263	MBOE Value Stream Management	Presents students with the state-of-the-art strategic and operational approaches to planning and implementing effective change across an enterprise. Students will be taught to identify and analyze concerns and implement solutions. Prereq: Enrollment in M
BUSMHR2292	Business Skills & Environment	Introduce the role of business in the lives of individuals, consumers, employees, and citizens. Focus on the concept of ethical leadership with emphasis on both oral and written communication skills for the business environment. Prereq: Admission to the
BUSMHR3510	Innovation and Entrepreneurship	Examines the many dimensions of new business creation and the fostering of innovation. Prereq: Not open to students with credit for 490, 490.01, 3510.01 or 3510.02
BUSMHR5530	Topics in Social Entrepreneurship	Developing a business plan in social entrepreneurship. Prereq: 2500 (290) and Econ 2001.01 (200). Not open to students with credit for 691 or 694.52.
BUSMHR7010	Advanced topics in Multinational Business	Examination of topics in international business, including the role of cultural and political systems, trade and FDI, and multinational enterprise. Prereq: MBA 6261 (820). Not open to students with credit for BusAdm 856.
BUSMHR7013	China and Its Global Business Implications	Introduction to the historical, economic, cultural, social and geopolitical circumstances of China's rise, and its global business repercussions. Prereq: Not open to students with credit for 833.
BUSMHR7016	Social Enterprise in Base-of-the Pyramid Markets	The role social enterprise organizations play in poverty alleviation and how to develop strategies for accomplishing social and financial objectives. Prereq: Not open to students with credit for 653.
BUSMHR7022	Global Labs III	Travel portion of Global Labs, following introduction to the region in which students will travel, including a discussion of the business environment, history, culture and labor markets. Students earn 0.5 credits for each week in country. Prereq: Permiss
BUSMHR7413	Advanced Strategic Analysis	Advanced strategic analysis provides students with a strategic perspective on management in complex, knowledge-intensive, and dynamic environments. The course introduces new tools and frameworks to consider how to evaluate highly uncertain investment prop
BUSMHR7460	Innovation Management	Different types of technological, market and organizational problems in technology or product life cycle. Prereq: Enrollment in MBA, WP MBA, MLHR or MAcc program, or permission of instructor. Not open to students with credit for 848.
BUSMHR7630	Creativity: Skills and Practice	How people, places, practices foster creativity. Readings from academic, spiritual, confessional, & self-help literature on creativity, productivity, happiness, & experience. Assignments of daily writing and self-assessments of personal creativity. Pre
BUSMHR7665	Innovation Field Studies	Diagnosing and solving real-world innovation problems. This course is progress graded.
BUSML3380	Logistics Management	Concepts and methods used to plan and manage logistics activities in a business environment. Understanding of the components of logistics management and tradeoffs required to manage the integrated flow of goods through the supply chain. Prereq: Econ 2001
BUSML4201	Consumer Behavior	Examines how and why people behave as consumers. Its goals are to provide an understanding of consumer behavior and to provide experience in the application of this knowledge to marketing management and social policy decision making. Prereq: 3250 (650),
BUSML4203	Marketing Strategy	This case course focuses on strategic planning examining how environmental factors affect long-term marketing strategies, how firms adapt to opportunities and threats in dynamic environments and how to assess development of competitive advantages. Prereq
BUSML4380	Advanced Logistics Management	Advanced coverage of the concepts and methods used to plan and manage logistics activities in a business environment; in-depth understanding of the components of logistics management and tradeoffs required to manage the integrated flow of goods. Prereq:
BUSML4383	Supply Chain Management	Focuses on distinction between logistics and supply chain management; cross-functional integration of key business processes within the firm and across network of firms that comprise supply-chain; framework for supply chain management. Prereq: 3380 and B
BUSML4384	Supply Chain Management Tools	Focuses on tools and methods for assessing and improving the collaboration that takes place between functions within the firm and companies within the supply chain; implementation of cross-functional processes to manage the supply chain. Prereq: 4383 and
BUSML4388	Warehouse Operations	Study of general warehouse operations, focusing on facility layout, financial analysis, labor relations, warehouse management systems, productivity improvement and measurement; impact of corporate and industry strategies on warehouse operations. Prereq:

BUSML5381	Transportation Management	Issues and strategies in transportation management and policy; emphasis on study of modes of transportation, intermodal and international transportation, capacity management, competitive relations between modes; aspects of carrier management. Prereq: 338
BUSML7206	Brand Management	The brand management process, strategic targeting, constructing compelling brand platforms, brand portfolio management, building and sustaining brand equity, brand equity metrics and strategic brand communications. Prereq: 6250 or MBA 6252 (840). Not ope
BUSML7382	Logistics Analytics	Focuses on the application of quantitative techniques. Problems addressed include demand forecasting, inventory control, and network design using spreadsheet analysis, optimization and simulation. Prereq or concur: 7380.
BUSML7383	Supply Chain Management	Students learn the distinction between logistics and supply chain management (SCM) and develop SCM skills with a focus on cross-functional integration of key processes within the firm and across the network of firms that comprise the supply chain. Prereq
BUSML7386	Logistics Technology and Application	Focus on the operational use and appropriate contextual use of logistics software technologies such as transportation management systems, warehouse management systems, inventory management and network design. Prereq: 7380.
CBE2523	Separation Processes	The application of mass and energy balances and transport phenomena such as fluid, heat, and mass transfer to chemical engineering separation operations of distillation, absorption, evaporation, extraction, drying, etc. Prereq: 2200 (201), and enrollment
CBE4764	Chemical and Biomolecular Engineering Process Design and Development	Process design studies on selected chemical processes encompassing a broad spectrum of fundamental engineering principles; optimization studies utilizing economic and technical simulation. Prereq or concur: 4760 (760), and enrollment in CBE major. Not op
CBE5713	Fuel Cells and Catalysis	An introduction to fuel cells and related concepts with an emphasis on the catalytic phenomena involved in fuel cells. Prereq: ChBE 3508, 3610 (610), 509, Chem 4310, or 531, or Grad standing, or permission of instructor. Not open to students with credit
CHEM6520	Thermodynamics	Fundamental aspects of chemical thermodynamics, including spontaneous change, 1st, 2nd, and 3rd laws of thermodynamics, free energy, and thermochemical calculations. Prereq: 4310 (532) or equiv. Not open to students with credit for 775.
CHEM6550	Atmospheric Chemistry	Chemistry of the lower atmosphere, including air pollution and climate change, chemistry and kinetics of atmospheric oxidants, heterogeneous chemical mechanisms, tropospheric and stratospheric gas and particulate phases relative to ozone depletion. 231 or
CHEM7350	Inorganic Photochemistry	Fundamental aspects of molecular photophysical processes, including energy and electron transfer, photochemistry of inorganic complexes, and applications.
CHEM7370	Nanochemistry and Nanomaterials	Advanced study of nanostructures and nanomaterials, including the basic physics for nanoscience and nanotechnology, synthesis and self-assembly, and nanotechnology in energy conversion and storage.
CHEM7550	Statistical Thermodynamics	Treatment of equilibrium & non-equilibrium stat mech, including fundamentals, statistical basis of thermodynamics, partition functions, thermal behavior of atoms & molecules, free energy, time-dependent stat mech, and linear response theory. Prereq: Not
CIVILEN2050	Probabilistic Applications and Data Interpretation in Civil and Environmental Engineering	Fundamentals of probability and statistical analysis for applications and data interpretation in Civil and Environmental Engineering design and analysis. Prereq: Enrollment in CivilEn or EnvEng major. Not open to students with credit for 405.
CIVILEN3080	Economic Evaluation and Optimization in Civil and Environmental Engineering	Fundamentals of engineering economics and optimization for civil and environmental engineering planning and design. Prereq or concur: 2060 (406), and enrollment in CivilEn or EnvEng major. Not open to students with credit for 576 or EnvEng 576. Cross-lis
CIVILEN3130	Fluid Mechanics	An introduction to fluid mechanics; topics include: fluid properties; fluid statics; flow concepts; continuity, energy, and momentum equations; dimensional analysis; basic pipe flow; lab experiments. Prereq or concur: 2050 (405) and MechEng 2030 (430); o
CIVILEN3160	Water Resources Engineering	Pipe systems, introduction to open channel flow, basic hydrology, demographic studies, water supply, and wastewater flows. Prereq: 3130 (413) or EnvEng 413; and CSE 1221 (205) or 1222 (202) or EnGraph 167 or Engr 1221 or 1222 or 1281H or Engineer; and en
CIVILEN3540	Geotechnical Engineering	Properties of natural soil deposits and subsoil exploration; engineering solutions to problems of slope stability, foundation settlement, and earth pressure. Prereq: MechEng 2020 (420) or 2040, and enrollment in CivilEn or EnvEng major. Prereq or concur:
CIVILEN5001	Introduction to Geographic Information Systems	Introduction to the basic principles of geographic information systems and their use in spatial analysis and information management. Prereq: 2050 (405), and Sr standing; or permission of instructor. Not open to students with credit for 607, GeodSciE 607,

CIVILEN5130	Applied Hydrology	Hydrologic cycle, meteorology, streamflow, evapotranspiration, hydrographs, runoff relations, runoff hydrographs, groundwater, unit hydrographs, flood routing, frequency and duration studies, and application of hydrologic techniques. Prereq: 3160 (516) or
CIVILEN5230	Transport Phenomena in Water Resources Engineering	Study of the mechanisms by which momentum, heat, and mass are transported in fluid systems of interest to water resources engineers. Prereq: 3160 (516) or EnvEng 516, and Math 2173, 2177, 2255 (255), or 2415 (415). Not open to students with credit for 72
CIVILEN5240	Groundwater Engineering	The role of groundwater in the hydrologic cycle, water supply, construction, and contamination. Includes principles describing subsurface water movement (seepage, saturated, and unsaturated flow). Emphasis on gaining a working knowledge of techniques used
CIVILEN5410	Engineering Surveying	Surveying applications for engineering, construction, mining and transportation work. Route surveying and geometric design; topographic site surveys and mapping; earthwork computations. Prereq: 2410, GeodSciE 410, or 450, and enrollment in CivilEn major,
CIVILEN5420	Remote Sensing of Environment	The energies of the natural and cultural environment, current remote sensing systems and case histories of applications in measuring the environment. Prereq: 2410 (400), or permission of instructor. Not open to students with credit for 603 or 606.
CIVILEN5421	Spatial Analysis Techniques for Civil Engineering	Principles of spatial analysis techniques for application to civil engineering, particularly in the water resources and geotechnical areas. Prereq: 5001 (607), or permission of instruction. Not open to students with credit for 608.
CIVILEN5431	GIS and Cartographic Engineering	Introduction to GIS and Cartographic Science and Engineering principles emphasizing the technical aspects of spatial information infrastructure, coordinate systems, projections, spatial databases, and cartographic design. Prereq: Enrollment in the Survey
CIVILEN5571	Principles of Foundation Analysis and Design	The forces imposed on the soil and rock that support the foundations of structures will be studied. Structural foundations that account for the behavior of the soil and rock and the interactions between soil and structure will be designed. Comparisons of
CIVILEN5770	Urban Public Transportation	Urban public transportation service planning, design, and operations with a focus on modeling and analysis for bus and rail modes. Prereq: 3700 (570), or Grad standing in CivilEn, or permission of instructor. Not open to students with credit for 670.
CIVILEN5810	Construction Safety and Forensics	Practical aspects of identifying construction and structural problems, construction accidents, mechanisms of failures and accidents, methods of avoidance and forensic engineering. Prereq: 2810 (682), or permission of instructor. Not open to students with
CIVILEN7760	Transportation Management Systems	Concepts and methods for the management of unscheduled and scheduled urban transportation systems. Emphasizes network performance and travel demand interactions, and real-time applications. Prereq: Grad standing, or permission of instructor. Not open to
CIVILEN7770	Infrastructure Systems Analysis	Presents a systems approach to infrastructure provision and management with a focus on the uncertainty inherent to large-scale and long-lived facilities. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 777.
CIVILEN7790	Transportation Practicum	Practical experience and perspective on practice of transportation engineering and planning. Prereq: Grad standing in CivilEn and CRPlan Dual M.S. Degree Program, and permission of instructor. Not open to students with credit for 990. This course is grad
CIVILEN8810	Construction Intelligent System and Simulation I	Applications of intelligent system to construction systems and operations. Simulations include mathematics and computer modeling. Knowledge about computer programming recommended. Prereq: 2810 and 5810, or permission of instructor. Not open to students w
CIVILEN8820	Construction Intelligent System and Simulation II	Applications of intelligent system to construction systems and operations. Simulations include mathematics and computer modeling. Knowledge about computer programming recommended. Prereq: 8810, or permission of instructor. Not open to students with credi
CLAS4597	Nationalism Revisited	Aims at rethinking nationalism by questioning perceived notions of the nation, identity, ethnicity, culture, citizenship and globalization. Prereq: Jr or Sr standing. Not open to students with credit for 597. GE cross-disciplinary seminar course.
COMLDR1100	Exploring Agricultural Communication, Education, and Leadership	Basic understanding of global trends within agricultural communication, agricultural education, and community leadership, the diversity of career opportunities within the industry, planning for a career and opportunities for professional development.
COMLDR5335	Volunteer and Human Resource Management	Introductory skills in volunteer and human resource management for working in educational and non-profit organizations with paid and unpaid staff. Examination of principles, methods, and models and application with case studies. Prereq: Not open to stude
COMLDR5382	Issues in Community and Extension Education	Explore past, current, and potential trends and issues related to Extension programming and apply them to professional settings. Students will learn about contemporary issues and how to use futuring and strategic planning tools to address the issues. Con

COMM2704	Language, Culture & Communication in Latino Health	Examines how language, culture & communication shape the healthcare experiences of Latinos in the US. Considers the individual & social factors contributing to health inequalities and key theories & techniques for developing health communication intervent
COMM3443	Global Media	Examination of international news communication systems and selected media concepts and the role they play in political, economic, and cultural environments. Prereq: Not open to students with credit for 643.
COMM3444	Advertising and Society	Examination of positive and negative contributions of advertising in the American mass media system to society from political, sociological, and economic perspectives. Prereq: Not open to students with credit for 644.
COMM4820	Public Opinion and Communication	Investigation of public opinion from social, political, and psychological perspectives, and study of the role communication (including the media) plays in the process. Prereq: Not open to students with credit for 620 or 620H.
COMM4853.02	Media and Social Movements	Communication technology and its use in social movements. Prereq: Not open to students with credit for 653.
COMM7830	Foundations of Organizational Communication	A survey course covering theory, methodological issues, environment, cultural issues and structures in organizational communication. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 830.
COMPSTD3360	Introduction to Globalization and Culture	History and contemporary dimensions of globalization, focusing on period preceding European hegemony, era of European colonialism, period of decolonization, and contemporary contexts. Prereq: Soph standing, or permission of instructor. Not open to studen
COMPSTD4565	History of Literacy	Explores how our understanding of literacy and its relationships to ongoing societies, cultures, and social change has been challenged and revised. Prereq: Two courses in CompStd or English at the 2000 (200), or 3000 (300) level, or permission of instruc
COMPSTD4597.0	Global Culture	Examines contemporary global cultural flows, the concepts useful in analyzing them, and the questions they raise about power and cultural change. Prereq: Completion of Second Writing course. Not open to students with credit for 597.02. GE diversity globa
COMPSTD4692	Comparative Social Movements	Comparative and interdisciplinary analysis of social movements and theories about social movement in various global contexts.
COMPSTD5864	Modernity and Postmodernity: Concepts and Theories	Introduces key issues and concepts defining modernity; focuses on how modernity has shaped recent and contemporary politics and culture; discussions of globalization. Prereq: Not open to students with credit for 660.
CONSCI3930	Consumer Decision-Making I	Contemporary consumer behavior theories and decision-making processes with implications for consumers, marketers, policy makers and managers in a global economy. Prereq: Sophomore standing or higher. Not open to students with credit for 543.
CONSYSM2310	Electrical and Lighting Systems for Buildings	Concepts of electricity and illumination applied to the design and installation of electrical and lighting systems in buildings including safety, code requirements, installation methods, electrical schematics, and construction blueprints. Prereq: Physics
CONSYSM2345	Mechanical Systems for Buildings	Fundamentals of HVAC, plumbing, fire protection and noise and vibration control and their impact on building design and construction. Prereq: Physics 1200 (111) or 1250 (131). Not open to students with credit for ConSysMt 345. This course is available fo
CONSYSM2600	Construction Safety and Health	Construction safety and health practices, strategies and methods for the development and management of safety and health programs in the construction industry. Prereq: ConSysM 1205 (ConSysMt 205). Not open to students with credit for ConSysMt 600. This c
CONSYSM3451	Scheduling Construction Projects	Planning, scheduling and tracking of construction project elements including management of time, resources, cost and safety. Prereq: ConSysM 3450 (ConSysMt 540). Not open to students with credit for ConSysM 541.
CONSYSM5680	Construction Renovation and Demolition	The practices, procedures and management strategies employed by construction managers in renovating and demolishing buildings and other structures. Prereq or concur: ConSysM 4642 (ConSysMt 642), or permission of instructor.
CRPLAN2110	Creating Innovative Cities and Regions	Successful cities rely on innovation to keep them forward-moving. Emerging trends and unmet market needs are studied to generate innovative planning solutions. Prereq: Not open to students with credit for 2110H or 110.
CRPLAN2600	Designing Communication for Planning	Graphic tools and techniques used for effective visual communication in planning. Projects focus on creative problem solving to communicate planning to a mass audience.
CRPLAN2700	Technology in Design	Software tools, information theory, and technology to aid in preparing for the professional planning workplace. Repeatable to a maximum of 20 cr hrs or 4 completions.

CRPLAN3100	Analyzing the City	Spatial, economic, and demographic tools aid in forecasting the future of cities and regions. These tools serve as a foundation for imagining the future. Prereq: Math 1118 (117) or 1151 (151) or 1131 (131), and CRPlan 3000; or permission of instructor. N
CRPLAN3300	Planning for and with People	Application of skills and techniques of community participation, emphasizing education, group formation and dynamics, consultation, engagement, and creative change within groups. Prereq: 2000 (310), 2110 (110), or 2110H (110H), or permission of instructor
CRPLAN3500	The Socially Just City	Too many cities are split between the haves and the have-nots. Explore how to reduce poverty, increase access to public services, and create a high quality of life for all residents. GE soc sci orgs and politics and diversity soc div in the US course.
CRPLAN3520	Planning Ethics	Planners work in complicated environments that can result in ethical and moral dilemmas. The planning code of ethics provides a framework for decision making. Prereq: Jr standing.
CRPLAN4200	Arts and Entertainment Planning	Planning for arts and entertainment districts, from the neighborhood art studio to entire cities as entertainment destinations.
CRPLAN4430	Workshop in City and Regional Planning	New trends, techniques and processes in planning are generated on a continual basis. This workshop explores the latest advances in planning. Prereq: Jr standing. Not open to students with credit for 780.
CRPLAN5010	Historic Preservation Planning	Cities are rich in history. Policies, incentives and planning aid in preserving unique historic character and heritage of cities. Prereq: Sr or Grad standing. Not open to students with credit for Arch 604.
CRPLAN5100	Technology in Design	Software tools, information theory, and technology to aid in preparing for the professional planning workplace. Repeatable to a maximum of 20 cr hrs or 4 completions.
CRPLAN5200	Metropolitan and Regional Planning	Cities and towns are becoming increasingly dependent on each other. Progressive approaches to regional planning directly influence the economy and quality of life. Prereq: Sr or Grad standing. Not open to students with credit for 753.
CRPLAN5400	Planning for Housing	Housing - including its uses, meaning, design, and role. The creation of a range of housing to support growth and revitalization of cities and regions. Prereq: Not open to students with credit for 320, 752, or PubAfrs 5400. Cross-listed in PubAfrs.
CRPLAN5700	Urban Transportation Demand Forecasting	Introduction and applications for quantitative demand forecasting in urban transportation. Prereq: Math 1118 or equiv, or Grad standing. Not open to students with credit for 775 or CivilEn 5700 (775). Cross-listed in CivilEn.
CRPLAN5890	Workshop in City and Regional Planning	Workshop on city and regional planning issues. Repeatable to a maximum of 15 cr hrs or 5 completions.
CRPLAN5960	Design Competition	Interdisciplinary teams develop design proposals to solve problems in the natural or built environment. Prereq: Jr, Sr, or Grad standing. Repeatable to a maximum of 9 cr hrs or 3 completions. Cross-listed in Arch and LArch.
CRPLAN6080	Advanced GIS for Professional Planning Practice	In-depth and hands-on training in GIS applications for city and regional planning. Prereq: 5001 and Grad standing, or permission of the instructor. Not open to students with credit for 608 or 609.
CRPLAN6100	Participation and Advocacy in Planning	Planning theories that support the planner's role in engaging and advocating for the public. Skills in public engagement techniques and tools. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 712.
CRPLAN6300	Law and Planning I: Land Use	The impact of law on planning, with an emphasis on the regulation of land use. Prereq: Grad standing, or permission of the instructor. Not open to students with credit for 761.
CRPLAN6420	Infrastructure Planning	Infrastructure development plans address the planning, budgeting and programming challenges of making cities run. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 783.
CRPLAN6430	Urban Design	Vibrant cities contribute to quality of life, through urban design and urban form. Site analysis, context sensitive design and impacts of design choices are explored. Prereq: Grad standing, or permission of the instructor. Not open to students with cred
CRPLAN6440	Research Methods for Urban Design and Planning	Behavioral research and evaluation (research design, validity, reliability, data gathering techniques) methods for urban design and planning questions. Prereq: Grad standing, or permission of the instructor. Not open to students with credit for 734.
CRPLAN6450	Planning and Evaluating Environments for Human Use	Introduction to user-oriented facility programming and evaluation for planners and designers; application of methods to specify characteristics of a place required to support user behavior. Prereq: Grad standing, or permission of the instructor. Not open
CRPLAN6610	Grant Writing in the Public Sector	Public officials rely on grants to help fund their grand plans. Planners find grants, prepare proposals, and manage grants to effectively support public projects. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 83

CRPLAN6700	Technology in Design	Software tools, information theory, and technology to aid in preparing for the professional planning workplace. Repeatable to a maximum of 20 cr hrs or 4 completions.
CRPLAN6810	Non-motorized Transportation Planning	Safely design a non-motorized transportation network that accommodates all users. Using effective planning strategies to create transportation master plans for pedestrian and bicycle networks. Prereq: Grad standing, or permission of instructor. Not open
CRPLAN6890	Workshop in City and Regional Planning	Workshop on city and regional planning issues. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 15 cr hrs or 5 completions.
CRPLAN6910	Comprehensive Planning Studio	Application of knowledge and skills to a comprehensive planning process in consultation with professionals to produce a plan for use by a real world client. Prereq: 6400 (745) and 6500 (762), or permission of instructor. Not open to students with credit
CRPLAN6920	Urban Design/Physical Planning Studio	Improvement of the aesthetics of the built environment through the creation of a physical plan for a portion of a city using an integrative process to solve planning challenges. Prereq: 6430 (731) or permission of instructor. Not open to students with cr
CRPLAN6970	International Development Studio	Cities and regions across the globe are rapidly urbanizing and are facing planning challenges. Plan development focuses on developing context-sensitive solutions. Prereq: 6400 (745) and 6500 (762), or permission of instructor. Not open to students with c
CRPLAN7000	Contemporary Planning Research	Introduction and overview of topics and techniques in planning research. Prereq: Grad standing. Not open to students with credit for 871.01.
CRPLAN7100	City & Regional Planning Theory	Critical inquiry into the dominant theories related to city and regional planning research and practice. Prereq: Grad standing. Not open to students with credit for 864.01.
CRPLAN7110	Development Theory	Critical inquiry into the classic debates and critiques of development theory related to planning research and practice in developing countries. Prereq: Grad standing.
CRPLAN7131	Creative Placemaking II: Building Capacity, Making Space and Marketing	Second in a sequence of two courses that train students to understand how to effectively and efficiently integrate community development, economic development and cultural development. Prereq: 7130, or permission of instructor.
CRPLAN7230	Foundations of Spatial Models in Planning	Discussion of economic foundations of spatial modeling. Prereq: Grad standing. Not open to students with credit for 881.
CRPLAN7400	Contemporary Topics in Planning	An examination of current issues in planning from both research and practice points of view. Prereq: Grad standing. Not open to students with credit for 816. Repeatable to a maximum of 15 cr hrs.
CRPLAN8300	General Practicum in City and Regional Planning	Supervised field experience in city and regional planning; analysis and critique of field experience. Prereq: Grad standing. Not open to students with credit for 990.
CRPLAN8880	Interdepartmental Seminar	Interdepartmental seminar related to city and regional planning issues. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.
CRPLAN8890	Workshop in City and Regional Planning	Workshop on city and regional planning issues. Prereq: Grad standing. Not open to students with credit for 780. Repeatable to a maximum of 15 cr hrs or 5 completions.
CRPLAN4900S	Plan Making	Plan creation focuses on working with real-world clients. Planning knowledge and skills will be applied to generate creative, innovative, and practical solutions. Prereq: 3100 (340) or 3100E, and acceptance into CRPlan BS major; or permission of instruct
CRPLAN4910S	Realizing the Plan	Apply knowledge and skills to an implementation challenge. Work in consultation with professionals to produce a regulation, policy, or tool for use by the client. Prereq: 4900S (510) or 4900E, or permission of instructor.
CSE2501	Social, Ethical, and Professional Issues in Computing	Social, ethical, and professional issues facing computing professionals; ethical principles; discussion of case studies. Prereq: 1222, 1223, 2231, 214, 222, or 230, and 2321 or Math 366, and Gen Ed Writing Level 2. Not open to students with credit for 55
CSE5501	Social, Ethical, and Professional Issues in Computing	Social, ethical, and professional issues facing computing professionals; ethical principles; discussion of case studies. Prereq: 1222 or 1223 or 2231 or 214 or 222 or 230, and 2321 or Math 366, and Gen Ed Writing Level 2. Not open to students with credit
CSFRST4583	International Retailing	Study of retailers using expansion outside domestic market as strategy; reasons and process of internationalization; social, legal and economic factors influencing internationalization. Prereq: 2373 (CSFsnRtS 275), CSE 2111 (200), Stat 1350 (135) or 1450

DESIGN3550.01	Materials, Process, and Production for Industrial Design	An overview of current and emerging materials and manufacturing processes commonly applied in production for Industrial Design. Prereq: Enrollment in Design major, or permission of instructor. Concur: 3151 and 3450.01; or 3153 and 3450.01. Not open to st
DESIGN3550.02	Materials, Process, and Production for Interior Design	An overview of current and emerging materials and manufacturing processes commonly applied in production for Interior Design. Prereq: Enrollment in Design major, or permission of instructor. Concur: 3151 and 3450.02; or 3153 and 3450.02. Not open to stud
DESIGN5102	Advanced Interior Design I	Principles of organizational strategy and interior identity development addressing the physical, social, and psychological context of work, leisure, and learning environments. Prereq: 4102, or Grad standing, or enrollment in Design major, or permission o
DESIGN5151	Advanced Industrial Design II	A competency with tools, technologies, skills and materials in the exploration, creation, and production of products, artifacts, environments, systems, communication solutions and services. Prereq: 5101, or Grad standing, or enrollment in Design major, o
DESIGN5152	Advanced Interior Design II	Student develops project that applies principles of organizational strategy and interior identity development addressing the physical, social, and psychological context of work, leisure, and learning environments. Prereq: 5102, or Grad standing or enroll
DESIGN5502	Interior Design Technology III	Principles of environmental control within the context of Interior Design. Prereq: 5101, or Grad standing, or enrollment in Design major, or permission of instructor. Concur: 5800. Not open to students with credit for 524.
DESIGN5600S	Design Matters	Students in this interdisciplinary design/build studio have the opportunity to work on site in a collaborative design environment with a local non-profit organization. Prereq: Enrollment in Design major, or permission of instructor. Not open to students
EARTHSC1105	Geology of the National Parks	Geologic processes, materials, and history revealed in geologic settings of the National Parks. Not intended for ASC BS students. Prereq: Not open to students with credit for EarthSci 100, 105, GeolSci100, or 105. GE nat sci phys course. NS Admis Cond co
EARTHSC1151	Natural Hazards	Occurrence and causes of earthquakes, volcanoes, and related hazards, and impact on climate, society, and history. Prereq: Not open to students with credit for EarthSci 151 or GeolSci 151. GE nat sci phys course.
EARTHSC2206	Principles of Oceanography	Introduction to the four basic disciplines of oceanography: geological, chemical, physical, and biological. Relevance of oceanography in contemporary issues. Prereq: Not open to students with credit for EarthSci 206 or GeolSci 206. GE nat sci phys course
EARTHSC2245	Introductory Data Analysis for Earth and Environmental Sciences	Data analysis using cooperative learning environment; topics include data visualization, error analysis, error propagation, probability distributions, hypothesis testing, ANOVA, linear regression, and spatial statistics. Prereq: Math 1151 (152) or above,
EARTHSC3310	Earth Systems Data Collection and Analysis	An introduction to the basic competencies in observation of earth systems, image interpretation, and software integration. Prereq: EarthSc 2245 (EarthSci 245), or other GE or GEC data analysis course; and Soph standing or above. Not open to students with
EARTHSC3315	Evolution: Contemporary and Interdisciplinary Perspectives	Develop an understanding of the interplay among different disciplinary approaches to evolutionary studies. Prereq: One Biology, one Anthrop, or one EarthSc course. Not open to students with credit for EarthSci 315 or Anthrop 3315 (315). Cross-listed in A
EARTHSC4501	Paleontology	Fundamentals of paleontology and processes responsible for the fossil record. Application of paleontology to geology, evolutionary studies, paleoclimatology, paleoenvironmental reconstruction. Prereq: EarthSc 1122 (EarthSci 122) or GeolSci 122, and 3 cr
EARTHSC5193.11	Individual Studies in Marine Geology, Limnology, and Oceanography	Special problems in any branch of marine geology, limnology, or oceanography for which the student has the proper qualifications. Prereq: Permission of instructor. Repeatable to a maximum of 30 cr hrs or 30 completions for the combination of EarthSc 5193
EARTHSC5550	Geomorphology	Investigation of the mechanics and chemistry of landscape development; interpretation of materials, processes, types, and evolution of landforms produced under diverse climates. Prereq: EarthSc 1121 (EarthSci 121) or GeolSci 121; EarthSc 1122 (EarthSci 1
EARTHSC5584	Principles of Oceanography for Educators	Origin, development, and structure of ocean basins and their contents; contemporary oceanic processes of geologic significance. 1 week, full-time at Stone Lab. Intended for in-service teachers and education majors. May not be used to satisfy BS, MS, or Ph
EARTHSC5602.01	Carbonate Depositional Systems I	The study of carbonates in modern settings including the origin, composition, and identification of constituents and cement, and depositional environments. Prereq: EarthSc 4502 or 6502 (EarthSci 502), or GeolSci 502 or equivalent. Not open to students wi
EARTHSC5622	Stable Isotope Biogeochemistry	Focus on theoretical and applied aspects of stable isotope biogeochemistry in the natural environment with emphasis on carbon, oxygen and nitrogen. Prereq: Sr or Grad standing in any science program; or permission of instructor. Not open to students with

EARTHSC5651	Hydrogeology	Geologic and hydrologic factors controlling the occurrence, movement, storage, and chemical quality of surface water and ground water; exploration, evaluation, development and management of water resources. Prereq: EarthSc 1121 (EarthSci 121) or GeolSci
EARTHSC5655	Land Surface Hydrology	Physical processes of land surface hydrology in the context of the global hydrologic cycle. Consideration of the processes and mechanisms responsible for water and energy fluxes, with examples from various river basins. Prereq: Math 1152 (153) or above,
EARTHSC5661	Petroleum Geology	The formation, accumulation, and trapping of oil and natural gas. Geologic source beds and traps; hydrocarbon flow; hydraulic properties of reservoirs and confining units; hydrocarbon chemistry; thin-section analysis of reservoir rocks. Prereq: 4423 or 6
EARTHSC5676	Elemental Chemical Analysis Using Inductively Coupled Plasma Optical Emission and Mass Spectrometry	Concepts and practical use of ICP-OES and ICP-MS for elemental chemical analysis of environmental, geological, geochemical, biological, medical, and materials sciences samples. Prereq: Chem 1220 (123) or above and Jr standing or above; and permission of
EARTHSC5718	Aquatic Geochemistry	Examination of the processes that control chemical equilibria in natural waters: acid/base reactions, metal complexation/speciation and oxidation-reduction processes. Intended for students in EarthSci, CivilEn, and the Grad EnvSci program. Prereq: Chem 1
EARTHSC5719	Environmental Organic Geochemistry	Fate and distribution of organic pollutants in the environment including aqueous solubility, vapor pressure, environmental partition coefficients, and transformation reactions Intended for students in EarthSc, CivilEn, and the Grad EnvSci program. Prereq
EARTHSC5751	Quantitative Reservoir Modeling	Principles of analytical and numerical techniques in modeling single- and multiphase flow in gas, oil, and water (aquifer) reservoirs. Development of Matlab code for two- and three-dimensional flow in porous media. Prereq: 2245 and Math 1152, or permissi
EARTHSC5752	Contaminants in Aqueous Systems	Examination of the occurrence, fate, and transport of contaminants in waters; emphasis on concepts of fluid flow and mass transport along with practical problems. Prereq: 5651 (EarthSci 651 or GeolSci 651). Not open to students with credit for EarthSci 7
EARTHSC8851	Seminar in Hydrogeology and Oceanography	Topics in hydrogeology and oceanography, such as ground-water hydrology and hydraulics, basin management, water resources, paleohydrology, reef and atoll development, or paleo-oceanography. Prereq: Permission of instructor. Repeatable to a maximum of 12
ECE5041	Electric Machines	Principles of electromechanical energy conversion; basic structures of electric machines; steady state models and performance analysis; advanced topics on AC machine control. Prereq: 3020 (323) and 3040 (341), or Grad standing in Engineering, Biological
ECE5043	Power Systems - Analysis and Operation	Power systems analysis and operations, including steady-state analysis, state estimation, and economic operation. Prereq: 3040, and ECE major; or Sr standing and ISE major; and Math 2568; or Grad standing in engineering or biological sciences or math and
ECE5127	Power Electronics Lab	Laboratory introducing basic circuits of power electronics, and simulation and control hardware and software for various power and energy applications. Prereq: 3040 (341) and enrollment in ECE major, or Grad standing in Engineering. Not open to students
ECE5137	Photonics Lab	Students perform experiments from among: solar cells, laser diode physics, liquid crystals, acousto-optics, optical sensing, and fiber optics. Prereq: 3010 (312) and 3030 (432), and enrollment in ECE major; or Grad standing in Engineering, Biological Sci
ECE5832	Photovoltaics and Energy Conversion	Photovoltaic materials and devices; solar cell device physics; solar cell simulation, design and operation; silicon cell technologies; thin film technologies; III-V technologies; nanostructures; terrestrial and space applications. Prereq: 3030, or Grad s
ECE8862	Special Topics in Advanced Computer Design Methodologies	Design automation, computer aided design, testing, and design for energy efficiency. Prereq: Grad standing in Engineering.
ECON1100.01	Current Economic Events in Historical Perspective	Introduction to economic analysis; historical background for interpreting current economic events. Discuss current issues in a historical context, including topics like taxes and unemployment. A one-course introduction to economics. Prereq: Not open to s
ECON1100.02	Freakonomics	Discuss current social problems and issues within an economics framework, including topics such as job discrimination and integration. A one-course introduction to economics. Prereq: Not open to students with credit for 110.02. GE soc sci human, nat, and
ECON4002.03	Intermediate Macroeconomic Theory	Analysis of the determinants of national output; income and employment levels; theory of economic growth and progressive equilibrium in an economy. Designates an advanced calculus-based version. Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 200
ECON4050	Experimental Economics	Introduction to economics as an experimental social science. Students participate in and study results of economic experiments dealing with markets, individual decision making, and a broad array of game theoretic economic models Prereq: 2001.01, 2001.02

ECON4100	Evolution of Economic Thought	Critical analysis of ideas of great economists, factors which influenced those ideas; their impact upon social and economic development of the modern world. Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.01, 2002.02 (201), or 2002.03H (201H)
ECON4300	Government Finance in the American Economy	Analysis of fiscal institutions and decision-making in the public sector of the American economy; budget planning and execution; taxation, debt, and fiscal policy. Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), or equiv. Not open to students with cr
ECON4500	Economic Development	Empirical and theoretical consideration of long-term economic changes, including changes in industrial structure, technology, and level of national product; emphasis on developing economies. Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), and 2002.0
ECON4553	Economics of Population	Using economic principles to analyze population growth, fertility, mortality, mating, dating, marriage, teen pregnancy, divorce, and migration. Prereq: 2001.01, 2001.02 (200), or 2001.03H (200H), or 2002.01, 2002.02 (201), or 2002.03H (201H). Not open to
ECON4700	Government and Business	Economic and legal aspects of government regulation of business in the United States; philosophies and concepts of public control; contemporary problems. Students planning on taking 5700 are encouraged to take it instead. Prereq: 2001.01, 2001.02 (200),
ECON5860	Health Economics	An introductory course to the field of health economics. Students will to apply concepts from introductory and intermediate microeconomics to problems that are faced in health and medical care. The focus is on individual demand for medical care; health in
ECON6711	Survey of Microeconomics	Methodology and scope of the neo-classical microeconomics paradigm; topics include the theory of competitive firms and consumers, general equilibrium, Pareto optimum, welfare theorems, non-competitive markets, uncertainty and asymmetric information. Prer
ECON6745	Contemporary Political Economy	Survey of contemporary theories on the interactions between economic policies, domestic institutions and the international economy, and their consequences for political economy. Prereq: Grad standing or permission of instructor. Not open to students with
ECON8721	Macroeconomic Theory IA	A rigorous introduction to modern macroeconomic analysis and models of economic growth with emphasis on dynamic competitive equilibrium analysis: topics include dynamic programming applied to stochastic environments. Prereq: Grad standing, and permission
ECON8842	Public Economics II	Theory of taxation and the analysis of tax structures in terms of efficiency, incentives, and distributional consequences. Topics include: social welfare functions, optimal taxation, incentive compatibility and tax avoidance, evasion and incidence. 8841 (
ECON8861	International Economics I	Theory and empirics of the determinants of trade, analysis of comparative advantage, trade patterns, gains from trade, commercial policies on resource allocations, income distribution and growth. Prereq: 8712 (804, 805). Not open to students with credit
ECON8862	International Economics II	Theory and empirics of international macroeconomics. Topics include: open-economy business cycles, determinants of exchange rates, international capital flows and resource allocations, financial constraints, and computational and estimation methods. Prer
ECON8875	Experimental & Behavioral Economics	A survey of concepts and methods in experimental and behavioral economics for advanced graduate students; topics include impacts of heuristics and biases on "rational" behavior, other-regarding preferences, bargaining, public goods and market design. 8873
EDUCST5880.05	Interprofessional Approaches to Policy Analysis	Interdisciplinary approach to the history, formation, and implementation of public policy issues of significance. Prereq: Jr standing, or above. Repeatable to a maximum of 4 cr hrs.
EDUCST5880.049	Interprofessional Education: Collaboration in Urban Communities	Students, faculty, community residents and professionals offer research-based solutions to community identified challenges. Focus on community asset mapping, best professional and interprofessional practices, and teamwork. Prereq: Jr standing or above. R
EDUTL2367	Education, Society and Writing	Designed to help students reflect critically, both orally and in writing, on the social, political, and cultural contexts that influence education in today's society. Prereq: A GE level 1 writing course. Not open to students with credit for 607. GE writi
EDUTL4005	Urban Teaching and Learning	This course introduces students to issues related to teaching and learning in urban school contexts. Prereq: Not open to students with credit for 559. GE soc sci indivs and groups and diversity soc div in the US course.
EDUTL5306	Literacy and Social Change	A community-based service learning experience linking knowledge of literacy and social action to a specific context in which to apply this knowledge and assist in enacting social change.
EDUTL7015	Curricular Approaches in Multicultural and Equity Studies in Education	Provides an overview of curricular approaches in MESE drawn from local, national and global scholarship and contexts. Students examine a variety of curricular approaches towards social justice and activist praxis in education. Prereq: 7014.
EDUTL7748	Engaging Community and Culture to Teach STEM	Explores a place-based approach to develop learning experiences that use the local community and culture as a real-world context to teach STEM to K-12 students. This course is appropriate for K-12 teachers and MA or PhD students. Prereq: Not open to stud

EEOB1930	Introduction to Biological Studies - Aquatic Biology (Stone Lab)	An introduction to the organisms of the ecosystem in freshwater aquatic environments. 1-wk course available summer session at Stone Lab. Prereq: Completion of high school Biology course. Not open to students with credit for 125.
EEOB2220	Biodiversity of Ohio - Birds	The general biology of birds with emphasis on their natural histories and field identification of local species. Prereq: 4 sem cr hrs in Biological Sciences. Not open to students with credit for 322.
EEOB3310	Evolution	Basic conceptual issues and processes in evolution with an emphasis on the ecological basis of adaptation and consequences of natural selection. Also available summer term at Stone Lab. Prereq: Biology 1114 or 1114H, or permission of instructor. Not open
EEOB3420	Behavioral Ecology	Comparative study of animal behaviors, and analysis of their adaptive value, physiological mechanisms, development, and evolution, within their ecological and social context. Also available summer session at Stone Lab. Prereq: Biology 1114 or 1114H, or p
EEOB4430	Ecological Methods I	Hands-on course for learning basic field and quantitative methods for ecological studies. Prereq: 3410. Repeatable to a maximum of 8 cr hrs or 4 completions.
EEOB4520	Comparative Physiology	Functional systems in invertebrates and vertebrates: respiration, circulation, water, ion, and energy balance; communication; locomotion; and reproduction. Prereq: Biology 1114 or 1114H, and 1 additional course in Biological Sciences. Not open to student
EEOB4930	Stream Ecology for Teachers (Stone Lab)	Introduces high school teachers to concepts and methodology of stream ecology. 1-week course available summer session through Stone Lab at Old Woman Creek, Huron, Ohio. Free lodging; students provide their own meals. Prereq: Enrollment in Education major
EEOB5210	Spider Biology - Stone Lab	Study of the biology of spiders including functional anatomy, behavior, webs and web-building, field and lab methods, identification, and ecology. 1-wk course available summer term at Stone Lab. Special fees assessed. Prereq: GPA 2.5 or above, and comple
EEOB5420	Aquatic Ecosystems - Ecology of Inland Waters	A study of the physical, chemical, and biological factors influencing the biological productivity of inland waters, and of techniques and equipment used in evaluating them. Also available summer session at Stone Lab. Prereq: 3410, or Grad standing, or p
EEOB5430	Aquatic Ecosystems - Fish Ecology	Lecture emphasis on the behavior, migration, distribution, and evolution of fish; laboratory emphasis on ecological and systematic ichthyology. Lab fee required. Also available summer session at Stone Lab. Prereq: 3410, or Grad standing, or permission
EEOB5450	Population Ecology	Quantitative study of the concepts, methods, and applications of population ecology. Prereq: 3410, or Grad standing. Not open to students with credit for 671.
EEOB5460	Physiological Ecology	Study of the physiological adjustment, tolerance, and acclimatization to the abiotic and biotic environment by animals and plants. Prereq: 3410, or Grad standing. Not open to students with credit for 654.01 and 674.
EEOB5910	Field Herpetology (Stone Lab)	Study of the distribution and classification of reptiles and amphibians of Ohio including field and lab methods, identification, and conservation. 1-wk course available summer session at Stone Lab and Old Woman Creek. Special fees assessed. Prereq: 12 se
EEOB5911	Tropical Herpetology	Field course on the study of reptiles and amphibians, with emphasis on tropical species identification, field techniques and methods, population ecology, and conservation strategies. Course will be conducted at a tropical field site such as the Biological
EEOB5920	Field Biology of Aquatic and Wetland Plants (Stone Lab)	Aquatic plants of the Great Lakes region. Field and laboratory work on their identification and ecological and geographical relations. Available summer session at Stone Lab. Prereq: GPA 2.5 or above, and Jr standing or above, and 12 sem cr hrs in Biologi
EEOB5950	Algae Identification Workshop (Stone Lab)	Hands-on workshop on collection, identification, preservation, enumeration, control techniques, and basic ecology of algae. Counts toward EPA certification for water professionals. 2-day course available summer session at Stone Lab. Prereq: 8 cr hrs in B
EEOB5960	Plankton Identification Workshop (Stone Lab)	Hands-on workshop on collection, identification, preservation, enumeration, control techniques, and basic ecology of plankton. Counts toward EPA certification for water professionals. 2-day course available summer session at Stone Lab. Recommended for man
EEOB6210	Ecotoxicology	Technical examination of the environmental fate and toxicity of organic xenobiotics, inorganics, and metals; emphasis on chemistry of interactions with physical environment, fugacity models, risk assessment, and predictive toxicology. Prereq: 3410, or Ch
EEOB7410	Ecological Methods II	Hands-on course for learning methods for ecological studies. Prereq: 3410, and an additional 8 sem cr hrs of coursework in EEOB; or Grad standing. Not open to students with credit for 513, 622, 651, 657, and 671.
EEOB7890	Agricultural Acarology	An intensive review of mites associated with crops, ornamental plants, and stored food products with emphasis on taxonomy and ecology of these animals. Prereq: Permission of instructor. Repeatable to a maximum of 8 cr hrs.

EEOB7892	Soil Acarology	Taxonomy, ecology, and life-history of mites associated with soil and litter. Prereq: 5890 (Entomol 670), and Biology 1114 (116) or 1114H (116H); or permission of instructor. Repeatable to a maximum of 12 cr hrs.
EEOB8896.04	EEOB Graduate Seminar: Ecology	Current topics in general ecology as related to evolution, ecology, and organismal biology. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.
EEOB8896.07	EEOB Graduate Seminar: Wildlife Biology	Current topics in wildlife biology as related to evolution, ecology, and organismal biology. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.
EEOB8896.08	EEOB Graduate Seminar: Fisheries Biology	Current topics in fisheries biology as related to evolution, ecology, and organismal biology. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.
EEOB8896.12	EEOB Graduate Seminar: Molecular Ecology	Current topics in molecular ecology as related to evolution, ecology, and organismal biology. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.
EEOB8896.13	EEOB Graduate Seminar: Physiological ecology	Current topics in physiological ecology as related to evolution, ecology, and organismal biology. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.
EEOB8896.18	EEOB Grad Seminar: Behavioral Ecology	Current topics in behavioral ecology as related to evolution, ecology, and organismal biology. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 20 cr hrs or 10 completions. This course is graded S/U.
ENGLISH4597.01	The Disability Experience in the Contemporary World	Global, national, and local issues of disability in the contemporary world; interdisciplinary approach combines historical, literary, philosophical, scientific, and service-oriented analysis of experience of disability. Prereq: 1110.01 (110.01) or equiv,
ENGR2201	Technology Basics 1	Introduction to technology concepts for design, communications, energy and manufacturing-technical and practical aspects. Intended for students without extensive science or math backgrounds. Prereq: A GE nat sci course.
ENGR4082	Study of Technology Issues	Lecture and discussion of current technological issues and their implications presented by leading experts in the area. Builds understanding of issue for informed citizenship. Prereq: 2202 (Engineer 202).
ENGR6210	Leadership and Team Effectiveness for Engineers	Introduction to topics in leadership and team effectiveness with a focus on applications for engineers. Prereq: Grad standing, and enrollment in MGEL degree program; or permission of instructor.
ENR2320	Landscape Maintenance	Management of landscape plantings with special emphasis on transplanting, mulching, nutrition, pest control, pruning, physiological disorders and diagnosing plant problems. Prereq: Not open to students with credit for 232 or HCS 232. This course is avail
ENR2367	Communicating Environmental and Natural Resources Information	Concepts, skills development, and practice in accessing and communicating information about the environment and natural resources to varied audiences; emphasis on written and oral communication. Au, Sp Sems. Prereq: English 1110 (110) or 111. Not open
ENR3000	Soil Science	Introduction to soil physical, chemical, and biological properties related to land use, environmental quality, and crop production. Au, Sp Sems. Prereq: Not open to students with credit for 300.01. This course is available for EM credit. GE nat sci phy
ENR3001	Soil Science Laboratory	Observation and quantitative determination of soil properties. Prereq or concur: 3000 (300.01). Not open to students with credit for 300.02. GE nat sci phys course. NS Admis Cond course.
ENR3285	Watershed Hydrology	Covers all aspects of hydrologic processes occurring within a watershed, including precipitation, infiltration, evapotranspiration, runoff, and streamflow. We will evaluate how the complex combination of watershed characteristics, climate, and land use pr
ENR3321	Biology and Identification of Woody Forest Plants	Field identification of trees, shrubs, and vines in temperate forest ecosystems; basic biological principles of morphology, reproduction, growth, genetics, and taxonomy of major woody species. Au Sem. Prereq: Not open to students with credit for 221.
ENR3322	Forest Ecosystems	Structure and function of temperate forest ecosystems; field-oriented study of the relationships among ecosystem components, and of the composition and successional dynamics of forest communities. One or more all-day field trips. Au Sem. Prereq or conc
ENR3323	Forest Biometrics	A study of the quantitative decision tools necessary to measure the forest resource; confidence and probability measures of land area, timber, water, wildlife, and recreation. Sp Sem. Prereq: 2000 (222), Stat 1450 (145), HCS 2260 (260), or AnimSci 2260

ENR3333	Silviculture	Ecological principles and practical applications of methods for controlling forest ecosystem structure and function; prescription of silvicultural practices in the field. One or more all-day field trips. Sp Sem. Prereq or concur: 2100 (201), 2300 (203),
ENR3611	Foundations for Environmental Communications, Education and Interpretation	Foundational course that prepares students for understanding the theoretical bases that relate to and differentiate between environmental communications, education, and interpretation. Course includes required field trips. Au Sem. Prereq: Not open to stu
ENR3700	Introduction to Spatial Information for Environment and Natural Resources	Introduction to methods of collecting and utilizing spatial information (GIS, RS and GPS) for Environmental and Natural Resources management. Prereq: Not open to students with credit for 3750 or 324.
ENR3750	Applied Remote Sensing for Environment and Natural Resources	Principles and methods of remote sensing and geographic information systems as applied to Environment and Natural Resources problems. 2 cl, 1 3-hr lab. Prereq: 2100 (201) and 2300 (203). Not open to students with credit for 324.
ENR4191	Professional Practice in Environment and Natural Resources	Preparation of a written report and delivery of a presentation based on internship employment in environment and natural resources professions. Au, Sp Sems. Prereq: Not open to students with 4 cr hrs for 689 or 4191. Repeatable to a maximum of 4 cr hrs.
ENR4260	Soil Resource Management	Degradation of the soil by erosion, compaction and salinity. Methods of preventing degradation and remediating existing problems. Special emphasis on conservation tillage, crop rotations, and irrigation management. Prereq: 3000 (300.01), or permission of
ENR4400	Law and Legal Process	Introduction to American law and legal process. Addresses law, science, and administrative process esp. in regard to planning and management of land, natural resources, and the environment; examines related cases, statutes, rules, permits. Prereq: Not op
ENR4610	Natural History of Ohio	Field course emphasizing inter-relationship among physical and biological factors in various ecological settings; field techniques and identification skills used for research paper. Sat field trip. Sp Sem. Prereq: Not open to students with credit for 510
ENR4950	Wilderness Leadership Education	Affiliate program with the North Carolina Outward Bound School (NCOBS). Field studies and practice of wilderness expedition skills, leadership, group dynamics, safety, judgment, and environmental studies. Approval of NCOBS application required. Specific c
ENR5250.02	Wetland Field Laboratory	Laboratory on wetland hydrology, vegetation, water quality, soils, and aquatic biota. Prereq: Concur: 5250.01. Not open to students with credit for 725 or 726.
ENR5260	Soil Landscapes: Morphology, Genesis and Classification	Course in soil genesis, classification and mapping. Au Sem. Prereq: 3000 (300.01) and 3001 (300.02); or Grad standing: or permission of instructor. Not open to students with credit for 650.
ENR5261	Environmental Soil Physics	Principally involves the state and transport of water, heat and gas within soil, and the associated soil physical properties. Sp Sem. Prereq: Not open to students with credit for 655 or 671.
ENR5262	Soil Chemical Processes and Environmental Quality	A comprehensive study of chemical processes in soils and their impact on environmental quality. Computer laboratory provides hands-on experience with geochemical speciation models. Prereq: Chem 121 and 122 or 125, or Grad standing, or permission of instr
ENR5263	Biology of Soil Ecosystems	A comprehensive study of microbial communities and their role in providing ecosystems services. Sp Sem. Prereq: 3000 (300.01) or SoilSci 300.01, or Grad standing. Not open to students with credit for 665 or 682.
ENR5265	Characterization of Soil in the Field and Laboratory: Sampling	Field soil observations; sampling across the landscape; GPS and GIS data acquisition systems and spatial statistical analysis; soil physical and water measurements in the field. Prereq: 3000 (300.01) and 3001 (300.02); or grad standing. Not open to stude
ENR5266	Field Soil Investigation: Soil Chemistry, Fertility and Biology	A comprehensive overview of theory, principles and techniques of laboratory methods used for chemical analysis of soil, plant material, and environmental samples. Sp Sem. Prereq: Not open to students with credit for 740.
ENR5270	Soil Fertility	Principles of soil fertility, plant nutrition, and nutrient management; environmental considerations and low input concepts in soil fertility. Prereq: 3000 (300.01), or Grad standing, or permission of instructor. Not open to students with credit for 580.
ENR5271	Soils of Forest Ecosystems	Characteristics and processes of soils in natural and managed forests; interactions of forest communities and soils; mgmt of soils in forest ecosystems. Designed for all students & practicing professionals in forestry & soil science. Au Sem. Prereq: 3000
ENR5272	Turfgrass Soils	Soil properties and processes of specifically designed and constructed soils meeting the agronomic and playability requirements of golf course and athletic field venues. Sp Sem. Prereq: 3000 (300.01); or Grad standing; or permission of instructor. Not op
ENR5279	Urban Soils and Ecosystem Services: Assessment and Restoration	A comprehensive study focused on assessment and restoration of urban soil to provide essential ecosystem services. Urban soil laboratory provides hands-on experience with soil assessment and restoration.

ENR5280	Stream Ecology	Structure, function, and biota of streams and rivers. Emphasis on ecosystem processes and community dynamics over space and time. Au Sem. Prereq: 3300 (319), or Grad standing, or permission of instructor. Not open to students with credit for 622.
ENR5345	Methods in Aquatic Ecology	Introduction to experimental designs, field and laboratory techniques, and statistical methods commonly used to study aquatic ecosystems. Au Sem. Prereq: 2100 (201), or grad standing, or permission of instructor. Not open to students with credit for 626
ENR5348	Conservation & Management of Aquatic Populations	Applies concepts and principles from the fields of population ecology, demography and population genetics to current conservation and management problems facing populations of aquatic organisms.
ENR5362	Wildlife Ecology Methods	Methods used by wildlife ecologists to measure population characteristics and habitat quality for wild terrestrial vertebrates. 1-2 Sat and 1 full weekend field trips required. Au Sem. Prereq: 2000 (222) or 3300 (319) or Stat 145; or Grad standing. Not o
ENR5364.01	Mammalian Wildlife Biology and Management	Identification, ecology, and population management of North American mammals. 1-2 Sat field trips required. Au Sem. Prereq: 3300 (319) or equiv, or Grad standing, or permission of instructor. Not open to students with credit for 624.
ENR5364.02	Avian Wildlife Biology and Management	Identification, ecology, and population management of North American birds. 1-2 Sat field trips required. Sp Sem. Prereq: 3300 (319) or equiv, or Grad standing, or permission of instructor. Not open to students with credit for 624.
ENR5451	Water Law	Review and advanced analysis of Ohio, interstate, and federal institutions and policies which influence the use and management of water resources. Sp Sem. Prereq: 4000 (400), or Sr standing or Grad standing, or permission of instructor. Not open to stud
ENR5614	Marine and Aquatic Education	Overview of oceanic and Great Lakes resources, their roles in history, climate, commerce, and culture; examination of teaching materials for formal and informal settings. Students pay travel costs for field trip. Taught at F.T. Stone Lab. Prereq: 15 cr h
ENR5642	Environment and Natural Resources Administration	Organization and administration of environment and natural resource agencies and non-governmental organizations. Sp Sem. Prereq: 4000 (400), or grad standing, or permission of instructor. Not open to students with credit for 642.
ENR5690	Workshop in Environmental Education	Problems of instruction in environmental education with consideration of both traditional approaches and current developments in content and methodology. Taught at F.T. Stone Lab. Su Sem. Prereq: Jr standing or above, and permission of instructor. Repeat
ENR6610	Soil and Environmental Biochemistry	Soil biochemical techniques, elemental transformations, biologically active compounds, pesticide metabolism, and fate of genetic materials in soils. Prereq: 3000.01 (300.01), Chem 231, or Biochem 511, or Grad standing. Not open to students with credit fo
ENR7333	Successional Dynamics of Forests	Analysis of past development of forest stands; examination of major processes causing changes over time in communities of trees. One or more all-day field trips. * Sp Sem (odd yrs). Prereq: Grad standing, and permission of instructor. Not open to student
ENR7530	Soil Mineralogy	Theory and application of methods for analyzing minerals in soil environments, including X-ray, thermal, and wet chemical techniques. 2 1-hr cl, 1 3-hr lab. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 753.
ENR8120	Spatial Methods in Environment and Natural Resources	Spatial analysis methods for environmental and natural resources data in small scale settings. Au Sem. 2 1-hr cl. Prereq: A grad course in Statistics. Not open to students with credit for 812.
ENR8510	Research Design for Environmental Social Sciences	Introduction to designing research for building and testing theory in environmental social science disciplines. Bridges qualitative and quantitative research approaches, applied to developing a practice thesis proposal. Sp Sem. Prereq: Grad standing. Not
ENR8780	Quantitative Methods for Environment and Natural Resources	Multivariate statistical methods used by natural resource scientists to study environmental relationships of plants and animals. Analytical methods are explained with real Forestry, Fisheries, and Wildlife data sets. * Sp Sem (even years). Prereq: Stat
ENR8890.04	Soil Science Seminar	Seminar on special topics in soil science in environment and natural resources. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 96 cr hrs or 8 completions.
ENR8890.07	Rural Sociology Seminar	Seminar on special topics in rural sociology in environment and natural resources. Prereq: Grad standing, or permission of instructor. Repeatable to a maximum of 96 cr hrs or 8 completions.
ENR8980	Environment and Natural Resources Seminar	Required seminar for all MS and PhD graduate students in environment and natural resources. Au, Sp Sems. Prereq: Grad standing. Repeatable to a maximum of 20 cr hrs. This course is graded S/U.

ENTMLGY1260	Introductory Insect Field Biology	Biology of insects and their relatives, with emphasis on behavior, ecology, and diversity; collection is required. Offered as one week summer course at Stone Lab. Prereq: Course in high school biology. Not open to students with credit for Entomol 126.
ENTMLGY2200	Beekeeping	General information on the biology, behavior and management of honey bee colonies, including pollination behavior and simple honey processing. Class will be video linked from Wooster.
ENTMLGY4602	Urban Landscape and Greenhouse Entomology	An economic entomology course covering the insect and mite pests of ornamental plants, turfgrass and greenhouse crops. Major pest groups are covered and control of the pests using Integrated Pest Management is emphasized. Prereq: 1101 (101), 1111, 3000 (
ENTMLGY4604	Urban Entomology	An introduction to household and structural insect pests, and integrated pest management strategies for combating these insects in urban and sensitive environments. Prereq: 1101, 1111, 3000, 4000, or 4600 (Entomol 460 or 462).
ENTMLGY5110	Ecology and Management of Pathogens and Insects Affecting Trees in Forest and Urban Environments	Overview of major pathogens and insects affecting health of forest and shade trees with emphasis on diagnosis, ecology, and management. Video-linked to Wooster. Sp Sem. Prereq: Not open to students with credit for Entomol 461 or PlntPth 610. Cross-listed
ENTMLGY5120	Aquatic Insect Biology and Ecology	A field course that allows students to develop interest, knowledge, and appreciation of aquatic insects. Use lake, river, and stream habitats to collect insects and study insect ecology and behavior. Summer course at Stone Lab. Prereq: 15 qtr cr hrs or 9
ENTMLGY5130	Field Insect Taxonomy	This is a traditional entomology "collect, preserve and identify" course. It is designed for majors, minors and plant health care students to become more fluent in their identification skills using taxonomic keys and performing biodiversity studies. Prer
ENTMLGY5500	Biological Control of Arthropod Pests	Covers philosophy, science, and application of biological control. Biology, mass-production, formulation, and application of various parasites, predators, and pathogens of pests will be discussed. Prereq: Entmlgy 1101 (Entomol 101), 1111, 3000 (500), or
ENTMLGY5604	Capstone Course: Problem-Based Studies in Plant Health	Students will be presented with a current plant health problem from the industry. They will gather diverse information from consultants, synthesize novel solutions, and develop implementation plans. Prereq: Jr, Sr, or Grad standing in Entmlgy, PlntPth, o
ENTMLGY6410	Insect Ecology and Evolutionary Processes	Overview of abiotic and biotic factors influencing the diversity, distribution, and abundance of insects, including the role of insects as model systems in the development of general ecological and evolutionary principles. Prereq: EEOB 503.01 or 503.03,
ENTMLGY6704	System Analysis, from Molecules to Ecosystems	Theory and practice of systems analysis and quantitative methods to describe and test complex hypotheses about insects in natural and managed ecosystems, focusing on processes of interest in entomology from molecular to ecosystem levels. Prereq: Math 117
ENTMLGY7940	Interdisciplinary Research, Teamwork and Leadership	Examines theories of interdisciplinary research, collaborative teamwork, and leadership in the context of complex global challenges. Students will use interdisciplinary research process and team approach to solve a real world problem.
ENVENG2090	Professional Aspects of Civil and Environmental Engineering	Topics in Civil and Environmental Engineering ethics and practice. Must be taken as soon as possible upon entering major. Prereq: CivilEn or EnvEng major. Not open to students with credit for 460 or CivilEn 460. Cross-listed in CivilEn.
ENVENG3210	Environmental Engineering Unit Operations	Selection and Design of Unit Operations and Processes used in Environmental Engineering. Prereq: 413 or CivilEn 3130 (413), and Chem 1220 (122) or 1250 (125), or permission of instructor. Not open to students with credit for 520 or CivilEn 520.
ENVENG3900	Environmental Engineering Process Development	Topics of special interest in environmental engineering process design. Studies in the analysis, design, testing, fabrication and construction of environmental engineering processes. Prereq: Jr standing or above in Engineering, or permission of instructo
ENVENG5110	Environmental Engineering Bioprocesses	Principles and design of biological processes in environmental engineering. Prereq: 3200 (511), or Grad standing. Not open to students with credit for 711.
ENVENG5430	Principles of Risk Assessment	Basic methodologies for quantitative risk assessment and applications to a variety of contaminants and pathways. Prereq: 3200 (511), or Grad standing in Engineering, EarthSc, or ENR, or permission of instructor. Not open to students with credit for 720 o
ENVENG6100	Environmental Engineering Analytical Methods	Application of analytical methods to calculate, measure and interpret chemical characteristics of water, soil, and air. Prereq: Chem 1220 (122) or 1250 (125), or Grad standing. Not open to students with credit for 2100 (610) or CivilEn 610.
ENVENG7217	Applied Mathematical Ecology	Description and application of basic methods to model population, communities and the interactions between ecosystems and the earth system. Prereq: 2060 (406) or Math 568, and EnGraph 167, CSE 1221, or 1222. Not open to students with credit for CivilEn 8

ENVENG7220	Colloidal and Interfacial Processes in Aquatic Systems	Fundamental concepts of the chemistry of the solid-water interface, adsorption/desorption, coagulation, and deposition in natural and engineered systems. Prereq: 2100 (610), or Grad standing, or permission of instructor. Not open to students with credit
ESCFE3206	School and Society	Use of concepts and methods of history, philosophy and the social sciences to grasp the interrelationship between society and education. Prereq: Not open to students with credit for EduPL 306. GE diversity soc div in the US course.
ESCFE7217	Globalization Processes in Education	Comparative sociocultural and historical perspectives of educational processes in an era characterized by geopolitical shifts, neoliberal economic expansion, and rapid movements of people, knowledge, ideologies, commodities and media.
ESCFE7222	History of Educational Policy	Historical analysis of social, economic, and political factors shaping public school policy in the US since 1800. Prereq: Not open to students with credit for EduPL 722.
ESEADM7364	Finance of School Districts	Explores the collective dimensions of leadership and the larger context of school finance that emphasizes economics and politics. Prereq: Not open to students with credit for EduPL 724.
ESEADM8361	Social and Political Contexts of Education	Examines societal conditions - economic, technological, social, cultural, and political -- that exert intense pressures on the educational system and pose great challenges to educational leaders. Prereq: Not open to students with credit for EduPL 961.
ESEPHL4403	Ethics and the Professional Context of Teaching	Examination of the practice of teaching at national, state and local levels, highlighting the legal, professional, and ethical issues surrounding American schools and teaching. Prereq: Not open to students with credit for EduPL 650.03 or 690.
ESEPHL6403	Ethics and the Professional Context of Teaching	Examines the practice of teaching at national, state, and local levels, highlighting the legal, professional, and ethical issues surrounding American schools and teaching. Prereq: Not open to students with credit for EduPL 609 or 650.03.
ESETEC2250	History of Technologies in Urban Schools and Communities	Introduction to the co-evolution of urban cities and different technologies with a focus on the development of urban population centers in the US.
ESETEC2251	Technology Interventions in Urban Schools and Communities	Develop media and computer competencies to support social justice projects in urban schools and communities.
ESETEC7288	Urban Communities, Technology, and Education	Examines the institutional, political, and historical factors shaping the uses of educational technologies in urban schools and communities. Prereq: Not open to students with credit for EduPL 789.
ESHESA7520	Diversity in Higher Education	Examines structural and cultural diversity in higher education in relation to race, ethnicity, gender, socio-economic status, sexual orientation, and religion of college/university constituents. Prereq: Not open to students with credit for EduPL 887.
ESSPED7830	Urban Education & Precision Teaching	Provides information about the challenges in urban education and how Precision Teaching can be used to address these challenges. Prereq: 5742 and 8861, or EduPAES 5742 (742) and 8861 (871); Grad standing or admission to the special education program, or
ESSPSY7029	Urban Issues in Education	Understanding of the dynamics of urban schools and the relationship between minority status and poverty, and educational achievement in urban schools. Prereq: Not open to students with credit for EduPAES 729.
ESSPSY8079	Mental Health III: Social Emotional Assessment	Social-Emotional and behavioral assessment of children in the school setting; introduction to linking assessment to intervention; and discussion of developmental, diversity, and urban issues related to assessment with children. Prereq: Not open to studen
ESWDE5624	Foundations of Workforce Development and Education	Offers economic, social, psychological and educational foundations of the fields in workforce development. Prereq: Not open to students with credit for EduPAES 624.
ESWDE7701	Teaching and Learning at a Distance: Foundations of the Virtual Classroom	An examination of the socio-cultural, political, economic, and educational trends and issues influencing the development and delivery of distance education. Issues of accessibility, access, affordability, technology, will be discussed.
FABENG2710	Surveying	Introductory course designed to teach the measurement and collection of data using traditional methods, total stations and GPS. These techniques will be integrated and applied to traversing, topographic mapping and water flow analysis. Prereq: Soph stand
FABENG3120	Thermodynamics in Food, Agricultural and Biological Engineering	Fundamentals of thermodynamics applied to food, agricultural, biological, and ecological systems. Prereq or concur: Math 2177, 2255, 2415 or 2174. Not open to students with credit for ChBE 508 and 509, or MechEng 501. This course is available for EM cred
FABENG3130	Heat and Mass Transfer in Food, Agricultural and Biological Engineering	Heat and mass transfer principles and applications to food, agricultural, biological and ecological systems. Prereq: 2110 or 2120.
FABENG3140	Professional Development in Food, Agricultural, and Biological Engineering	Professional development related to food, agricultural, biological and ecological engineering; business communication skills for professional advancement; engineering ethics; health and safety; and the engineer's responsibilities to society. Prereq: 3rd

FABENG3150	System Dynamics and Electricity	Modeling of mechanical, fluid, thermal, electrical, and bio-systems. Analytical, computer simulation and experimental solution methods. 1st and 2nd order systems, frequency response. Electric power distribution, electric motor selection and control. Prer
FABENG3481	Introduction to Food Engineering	Introduction to material and energy balances, momentum, heat and mass transfer. Applications of basic engineering principles in food processing through problem solving and laboratory experiments. Offered for Food Science & Technology. Prereq: Math 1151 (
FABENG4410	Unit Operations in Food Engineering	Study of unit operations in preserving foods by thermal and alternative food processing methods through problem solving and experimentation. Interdependence of food engineering, chemistry, and microbiology principles in food preservation. Prereq: 2120 an
FABENG5160	Electronics, Measurement and Instrumentation	Analysis of analog and digital electronic components and circuits. Analysis and design of measurement systems; data acquisition, signal conditioning, error and noise control, sensors and transducers used in food, agricultural and biological systems. Prer
FABENG5161	Measurement and Instrumentation	Analysis and design of measurement systems; data acquisition, signal conditioning, error and noise control, sensors and transducers used in food, agricultural and biological systems. Prereq: 525 or equiv. Not open to students with credit for 605.
FABENG5730	Design of Agricultural Water Management Systems	Use of soil physics, porous media flow theory, soil-plant interactions, hydrology, and hydraulics to design and manage irrigation and drainage systems. Prereq: 2110 or CivilEn 3130 (413), and 2720 (373) or equiv; or Grad standing. Not open to students wi
FDSCTE4536	Food Safety and Public Health	Principles and practice of food safety; transmission, inactivation and control of foodborne pathogens, hazards, toxins and allergens; risk assessment, sanitation, and pest control in foods. Prereq: Micrbio 4000 (Micrbiol 509). Not open to students with c
FDSCTE4597.02	Food and Health Controversies in the 21st Century	Examines current controversies surrounding food. Topics include biotech foods, dietary supplements, childhood obesity and public policies domestically and abroad that fuel the controversies Prereq: Jr standing. Not open to students with credit for 597.02
FDSCTE5536	Food Microbiology Lecture	Microbiology as applied to food. Students learn about microorganisms that spoil food or cause food-transmitted diseases, as well as beneficial microorganisms. Control of harmful microorganisms in food is discussed. Prereq: Micrbio 4000 (Micrbiol 509) or
FDSCTE6320	Global Health and Environmental Microbiology	Fundamentals and emerging issues of health significant microorganisms (bacteria, viruses, protozoa) from water, air, soil and food, and their sources, transmission routes, treatments, detection methods and study tools. Prereq: Not open to students with c
FDSCTE7360	Water Contamination: Sources and Health Impact	Understanding the sources, the transport mechanisms and the fate of microbial and chemical contaminants, their exposure risks, tracking methods, linking to other environmental matrices and their public health impacts. Cross-listed in PubHlth 7360.
FDSCTE7830	Phytochemicals in Human Health: Crops to the Clinic	Covers the function and control of phytochemicals in plants, the function of phytochemicals in human health, delivery of phytochemicals through foods in the diet, strategies when designing studies examining foods for health, and policy and sustainability
GEOG1900	Extreme Weather and Climate	Surveys characteristics and processes of Earth's atmosphere and how it interacts with the planet's surface, oceans, and human activity. The course focuses on how these interactions work to produce extreme weather events and climate extremes and how they a
GEOG2960	Introduction to Physical Geography	The elements and processes of the natural environment, their characteristics, distribution, and implications in the human habitat. Prereq: Not open to students with credit for 1900 (120), 1900H (120H), 2800 (210), 2960H (220H), or 220. GE nat sci phys co
GEOG3701	The Making of the Modern World	The geographies of modernity and their formation: the world market, the global polity, diasporas and constructing difference, colonialism, the transformation of nature, Eurocentricity, post-modernity. Prereq: Not open to students with credit for 450. GE
GEOG3980	Biogeography: An Introduction to Life on Earth	The patterns and processes responsible for the global distribution of Earth's flora and fauna; the inter-relationship between biota and soils; climate and topography will be emphasized. Prereq: Not open to students with credit for 490.
GEOG5223	Design and Implementation of GIS	Practice-oriented development, design, implementation and evaluation of spatial databases, with an emphasis on local problems. Prereq: 5220 (607) or equiv, or permission of instructor. Not open to students with credit for 687.
GEOG5226	Spatial Simulation and Modeling in GIS	Fundamental modeling and simulation techniques in GIS, including cellular automata, diffusion models, and agent-based models, and their applications in social, environmental, and natural resources research. Prereq: Not open to students with credit for 52

GEOG5300	Geography of Transportation	Relation between transportation and spatial organization; selected analytical models dealing with traffic demand, network configuration, and allocation of transport facilities; application to selected problems. Prereq: Not open to students with credit fo
GEOG5700	Geography of Development	Political economy of development; development theory; the historical geography of capitalist development; and contemporary development practices and strategies. Prereq: Not open to students with credit for 642.
GEOG5752	South Africa: Society and Space	South Africa's racialized geographies, patterns of urbanization and uneven development, and the role of social struggle in their production. Prereq: Not open to students with credit for 608.
GEOG5921	Microclimatology: Boundary Layer Climatology	Theory of exchanges of energy and mass at the Earth-atmosphere interface as it relates to microclimates with particular emphasis upon radiation and climate. Prereq: 5900 (520) or AtmosSc 2940 (230) or permission of instructor; and Physics 132 or its succ
GEOG5922	Microclimatology: Microclimatological Measurements	Practical experience in the fabrication of instruments, deployment of measurement systems in the field, and recording of data related to microclimates. Prereq: 5921 (622.01). Not open to students with credit for 622.02.
GEOG8401	Seminar: Theory of Population and Social Geography	The development of theory in population and social geography and its application to selected problems. Repeatable to a maximum of 15 cr hrs or 5 completions.
GEOG8402	Seminar: Problems in Population and Social Geography	The development of theory in population and social geography and its application to selected problems. Repeatable to a maximum of 15 cr hrs or 5 completions.
GEOG8501	Seminar in Urban Geography: Spatial Organization of the City	The development of theory in urban geography and its application to selected problems of spatial organization of the city. Repeatable to a maximum of 15 cr hrs or 5 completions.
GEOG8502	Seminar in Urban Geography: Urban Systems Analysis	The development of theory in urban geography and its application to selected problems in urban systems analysis. Repeatable to a maximum of 15 cr hrs or 5 completions.
GEOG8503	Seminar in Urban Geography: Third World Urbanization	The development of theory in urban geography and its application to selected problems in third world urbanization. Repeatable to a maximum of 15 cr hrs or 5 completions.
GEOG8920	Microclimatology	Radiation and turbulence processes, conduction; variation in wind, temperature, humidity, soil moisture, evaporation, soil temperature; influence of vegetation and artificial structures. Prereq: 5940 (622.01) or 5921 (620). Not open to students with cred
HCS2340	Landscape Plants	Overview of the identification and management of plants used in gardens and landscapes. Prereq: Not open to students with credit for 234.
HCS3340	Landscape Plants II	Expanded study of landscape plants used in constructed landscapes. Emphasis on identification, proper selection and appropriate use for sustainable management of deciduous and evergreen trees, shrubs, vines and herbaceous ornamental plants. Prereq: 2201
HCS3521	Basic Greenhouse Production	Introduction to manipulating the greenhouse environment to grow plants. Includes identification of and specific requirements for growing plants commonly grown in greenhouses and shade structures. Prereq: 2201 or 2202. Not open to students with credit for
HCS4325	Plant Genetics	A study of plant transmission and functional genetics and their role in crop improvement. Prereq: 2200 (200) or 2201 or 2202 or 300 or MolGen 3300 (PlntBio 300); and Chem 1110 (101) or 1210 (121); and Biology 1101 (101) or 1113 (113), or MolGen 1101 (Pln
HCS4410	Landscape Management	Sustainable practices in Landscape Management covering business issues (labor, estimation, equipment) and technical issues (softscape & hardscape installation, maintenance) typical of landscaping firms, with emphasis on field experience. Prereq: 2201, 24
HCS4570	Turfgrass Management and Science	A study of cultural practices and environmental factors affecting the maintenance of quality turf. Prereq: 3470, and Biology 1101 or 1113. Not open to students with credit for 570.
HCS5412	Forages, Grasslands, and Prairies	Growth characteristics, adaptation and utilization of grassland species for hay/silage, grazing, fuel and conservation. Prereq: 2201 or 2202, and Biology 1101 or 1113; or Grad standing. Not open to students with credit for 412.
HCS5422	Principles of Weed Ecology and Management	A study of weed biology and ecology, and methods of vegetation management. Prereq: 2201 or 2202, and Biology 1101 or 1113; or Grad standing. Not open to students with credit for 422 or 610.
HCS5521	Advanced Greenhouse Production	Advanced considerations in the manipulation of the greenhouse environment to control the growth and development of greenhouse crops. Prereq: 3521, Chem 1110 or 1210, and Biology 1101 or 1113; or Grad standing. Not open to students with credit for 521.
HCS5621	Physiology of Cultivated Plants	A study of basic physiological processes in plants and how they impact crop production and productivity. Prereq: 2201, 2202, and Biology 1113; or Grad standing. Not open to students with credit for 621.

HDFS2900	Methods in Human Ecology Research	Introduction to the fundamental elements of human ecology research, using qualitative, quantitative, and historical perspectives. Prereq: Not open to students with credit for 334.
HISTORY1102	Latin American Civilizations since 1825	Latin American political, social, economic, and cultural history from independence (1825) to the present focusing on neo-colonialism, instability, underdevelopment, militarism, and minorities. Prereq or concur: English 1110.xx. Not open to students with
HISTORY2120	Revolutions and Social Movements in Modern Latin America	Latin American history from independence (1825) to the present focusing on revolutions, dictatorships, labor, political, and social movements, women, and indigenous populations. Sometimes this course is offered in a distance-only format. Prereq or concur
HISTORY2500	20th Century International History	Examines international political, economic, and military relations from the origins of World War I through the break up of the Soviet Union. Sometimes this course is offered in a distance-only format. Prereq or concur: English 1110.xx, or permission of i
HISTORY2650	The World since 1914	Global perspective on major forces that shaped the world since 1914. Provides students with factual knowledge and a critical interpretive framework for responsible global citizenship. Prereq or concur: English 1110.xx, or permission of instructor. Not op
HISTORY2704	Water: A Human History	History of human use and understandings of water from ancient to modern times, with case studies taken from different geographic locations. Sometimes this course is offered in a distance-only format. Prereq or concur: English 1110.xx, or permission of in
HISTORY3015	From the New Era to the New Frontier, 1921-1963	Advanced study of U.S. social, political, cultural, foreign policy history, 1921 to 1963, covering New Era, New Deal, WWII, Cold War, Eisenhower Republicanism, New Frontier. Prereq or concur: Any 2000-level History course, and English 1110.xx; or permiss
HISTORY3020	19th Century American Ideas	Urbanism, evangelicalism, slavery, Darwinism, Modernism, Anti-modernism. Prereq or concur: Any 2000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 579.01. GE historical study course.
HISTORY3040	The American City	History of the American city (urban-suburban) from colonial times to the early 21st century. Sometimes this course is offered in a distance-only format. Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical
HISTORY3712	Science and Society in Modern Europe	History of science in modern Europe from Scientific Revolution to contemporary climate science and genetics. Prereq or concur: Any 2000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 520.02. G
HISTORY3715	Explorations of Science, Technology and the Environment in East Asia	Case studies in the Development of Science, Technology and Environmental Change in the East Asian context, pre-modern to modern times. Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. Not open to students with credi
HISTORY4700	Readings in the History of Environment, Technology, and Science	Advanced readings on selected topics in Environmental History, Technology and Science. Prereq or concur: Any 3000-level History course, and English 1110.xx; or permission of instructor. Repeatable to a maximum of 6 cr hrs.
HISTORY4705	Research Seminar in the History of Environment, Technology, and Science	Advanced research and writing on selected topics in Environmental History, Technology and Science. Prereq or concur: Any 3000-level History course, and English 1110.xx; or permission of instructor. Repeatable to a maximum of 6 cr hrs.
HISTORY7014	Studies in American Urban History	Graduate Reading Seminar in American Urban History. Chronology and Themes will vary. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.
HISTORY7700	Graduate Readings in Environmental History	Graduate level readings course in the historiography and key themes in environmental history. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.
HISTORY8700	Seminar in Environmental History, Technology and Science	Graduate Research Seminar in the History of Environment, Technology, and Science. Topics will vary. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs or 5 completions.
HTHRHS4300	Contemporary Topics in Health and Society	Offers the opportunity to delve into the current issues and factors that are influencing and shaping both society and health systems. Prereq: 3400 (AlliMed 640), and Sr standing, or permission of instructor. Not open to students with credit for AlliMed
HTHRHS5620	Aging, Accessibility, and Design	Analysis and development of product and residential environment design for an aging population using environmental adjustment theories. Students apply Universal Design principles to home modifications. Prereq: Sr standing, or permission of instructor. No
HTHRHS5650	Aging and Public Policy Issues	Examines major public and social policy issues of aging society, citizen participation in policy process, and analysis of policy decisions for the aging population in the United States. Prereq: Not open to students with credit for AlliMed 664 and 667.
HTHRHS5880.0	Interprofessional Education Seminar on Interprofessional Care	Develop and practice skills necessary for interprofessional collaboration in solving complex human problems. Case based. Limited to students enrolled in Health and Rehabilitation Sciences, Edu, Law, Med, Nursing, Social Work and Theology. Repeatable to a

HTHRHS7010	Health Literacy	Examine and analyze issues of low health literacy, including populations at risk, measurement tools, writing in plain language; health communication techniques; and organizational approaches. Prereq: Not open to students with Grad standing in Health Scie
HUMNNTR2310	Fundamentals of Nutrition	Nutrient and energy needs of the human biological system throughout the life cycle including energy balance with consideration of socio-psychological factors. Prereq: Biology 1113 (113) or 1101 (101), or equiv; and Chem 1210 (101 or 121) and 1220 (102 or
HUMNNTR3415	Global Nutrition Issues	Topics in global nutrition with critical appraisal of research basis and alternative viewpoints. Current issues include research and evaluation, major global nutrition issues (obesity, food insecurity, malnutrition, bioengineering, vegetarianism). Prereq
HUMNNTR7620	Food and Nutritional Toxicology	Overview of absorption, metabolism and excretion of xenobiotics, allergenic and toxic constituents, role of diet in mutagenesis and carcinogenesis, food processing induced toxins and procedures, laws and regulation of safety assessment of foods. Prereq:
INTSTDS2000	Introduction to Africa	Interdepartmental survey of the land, people, history, politics, social institutions, economic development, literature and the arts. Prereq: Not open to students with credit for 250. GE soc sci orgs and polities and diversity global studies course.
INTSTDS2200	Introduction to the Modern Middle East	Interdepartmental survey of the land, people, history, politics, religions, philosophy, social institutions, economic development, literature, and the arts. Prereq: Not open to students with credit for 245. GE soc sci orgs and polities and diversity glob
INTSTDS2250	Russia: From Communism to Capitalism	Survey of the birth, growth, and death of the communist Soviet Union and of the cultural, social, economic, and political trajectory of its successor, Russia. Prereq: Not open to students with credit for 230 or 2250H (230H). GE soc sci orgs and polities
INTSTDS2251	Introduction to Eastern Europe Since World War II	Survey of the land, people, history, politics, social institutions, literature, and arts of Eastern Europe since World War II. Prereq: Not open to students with credit for 231. GE soc sci orgs and polities and diversity global studies course.
INTSTDS2500	Introduction to Development Studies	Examines theories of political economy and development, as well as the historical geography of global capitalism and contemporary issues in international economic development. Prereq: Not open to students with credit for 215. GE soc sci human, nat, and e
INTSTDS3450	Human Rights: An Introduction	Provides an interdisciplinary introduction to the conceptual history as well as the practice of human rights. It traces the evolution of the idea of human rights, its adoption in international and domestic covenants, its role in domestic and international
INTSTDS4253	Central Asia in World Affairs	Survey of a region of the world in a key geo-strategic position between Russia, China, Southern Asia and the Middle East and with extensive natural resources that make its economic and political development important to the world's major powers.
INTSTDS4451	The Immigration Controversy through Film	Examines the controversial phenomenon of immigration through the medium of film. Throughout the semester, we will examine the politics of migration through scholarly materials focusing on concepts like globalization, citizenship, and identity in order and
INTSTDS4539	China's Economic Reforms and Globalization	An introductory survey course of economic reforms and globalization in China with emphasis on the country's economic and social transformation, and its integration into the global economy. Prereq: AEDEcon 2001 (200) or Econ 2001 (200), or permission of i
INTSTDS4661	The City and Culture	Introduction to the comparative and cross-cultural study of cities, urban culture, and urbanism. Prereq: One course in CompStd or IntStds, or Grad standing, or permission of instructor. Not open to students with credit for 531 or CompStd 4661 (531). Cros
INTSTDS4803	Intervening for Peace: Peacekeeping and Collective Security	Exploration of the theory and practice of international peacekeeping and collective security. Prereq: Not open to students with credit for 551.
INTSTDS4804	Applied Nonviolence I: Methods	Provides an introduction to the strategies and methods of pursuing peace and social justice through nonviolence. Through a combination of reading, discussion, and practical experiments participants will develop a sound understanding of nonviolence theory
INTSTDS4850	Understanding the Global Information Society	Invites students to think critically about the global networks that are shaping the new knowledge creation & sharing processes. To monitor news, investigate web resources & gather information for assignments, report & case study analysis. Prereq: Soph st
INTSTDS4852	Research in Globalization	Explores aspects of globalization through the process of research, hypothesis construction, data gathering and analysis and preparing a finished research product. Prereq: 3850 (356) and CompStd 3360 (357), or permission of instructor. Not open to student
INTSTDS4873	Contemporary Religious Movements in Global Context	Examination of contemporary religious movements within the context of larger political, cultural, and economic processes, including post-colonialism, modernization, and globalization. Prereq: Coursework in CompStd or IntStds, or Grad standing, or permiss

INTSTDS5051	East Asia in the Post-Cold War Era: Issues in Regional Security & Economic Development	Become familiar with and to analyze East Asian regional security and economic issues in the post-Cold War era. Looking at the region as an international subsystem, the course focuses on the regional level and examines its global consequences. Prereq: So
INTSTDS5640	Globalization and Latin America: Multi-Disciplinary Approaches	Explores current debates on globalization in Latin America and recent and interrelated transformations in the economies, politics, and cultures of the region. Prereq: Jr standing or above. Not open to students with credit for 640 or Spanish 5640 (640). C
ISE2500	Introduction to Manufacturing Engineering	Fundamentals of common manufacturing processes, materials and tooling; relationship of product design to required processing sequences and steps, attributes of manufacturing systems. Prereq: Not open to students with credit for 350 or IndEng 311.
ISE3210	Nonlinear and Dynamic Optimization	Introduction to nonlinear, dynamic, and network optimization models and solution techniques. Prereq: 3200, 520, Math 2174 (568 or 571), or IndEng 522, and major in ISE; or permission of instructor. Not open to students with credit for 521 or IndEng 523.
ISE3230	Systems Modeling and Optimization for Analytics	Introduction to formulation, solution and analysis of continuous and discrete linear and nonlinear models to optimize systems using data-driven techniques. Prereq: Math 1152, 2568, and CSE 2231. Not open to ISE majors or to students with credit for 3200
ISE3600	Workplace Ergonomics: Analysis and Design of Physical Work Systems	Explores physiological and biomechanical principles used to analyze and design work systems (tasks, tools, equipment) so people can perform their jobs more effectively and safely. Prereq: Stat 3470, or equiv, and Jr or Sr standing in ISE major; or permis
ISE3800	Engineering Project Management	Project management for engineers, including project life cycle, planning, optimization models, management of change and scheduling and budgeting. Prereq: Jr standing, and major in ISE or Engineering Physics; or permission of ISE Academic Advisor. Not ope
ISE4500	Manufacturing Process Engineering	A thorough quantitative understanding of contemporary manufacturing processes; exposure to laboratory exercises and computer simulations in major manufacturing processes; design for manufacturing and assembly. Prereq: Option 1: MechEng 3670. Prereq or c
ISE5043	Power Systems - Analysis and Operation	Power systems analysis and operations, including steady-state analysis, state estimation, and economic operation. Prereq: 3040, and ECE major; or Sr standing and ISE major; and Math 2568; or Grad standing in engineering or biological sciences or math and
ISE5555	Manufacturing Processes and Machine Tools	Focuses on machining processes: cutting, grinding and milling. It includes descriptive and analytical treatment of machining processes, equipment, computer control and integrated systems. Prereq: Jr, Sr, or Grad standing in Engineering, or permission of
ISE5682	Fundamentals of Product Design Engineering	Fundamentals of the product design process, from concept creation to final implementation, including product architecture and design for manufacture and assembly. Prereq: Sr or Grad standing in Engineering, or permission of instructor. Not open to studen
ISE5710	Behind Human Error: Safety and Complex Systems	Covers how complex systems fail and the human contribution to success and failure by studying actual disasters in diverse fields. Prereq: Sr or Grad standing, or permission of instructor. Not open to students with credit for 875.
ISE5800	Advanced Project Management	Advanced project management engineering techniques to implement and optimize project-driven change; communication and leadership strategies critical to successful optimization of a firm's processes and systems. Prereq: 3800, or permission of instructor.
ISE5820	Systems Thinking in Engineering and Design	Concepts and heuristics in systems thinking and complex systems analysis and how these concepts apply to engineering and design projects. Prereq: Sr or Grad standing, or permission of instructor. Not open to students with credit for 688.
ISE7700	Cognitive Systems Engineering: Advanced Topics	Seminar on emerging themes about human-machine systems and how these relate to current societal issues. Prereq: Grad standing. Repeatable to a maximum of 15 cr hrs.
ISE7720	Cognitive Systems Engineering: Models and Methods	Covers models of human-machine cognitive systems and methods to study of human-machine cognitive systems in complex work settings. Prereq: Grad standing. Repeatable to a maximum of 9 cr hrs.
ISE8299	Special Topics in Optimization	Selected topics in optimization, of special interest to advanced graduate students in Industrial and Systems Engineering and related fields. Repeatable to a maximum of 16 cr hrs or 4 completions.
LARCH2300	Outlines of the Built Environment	Introduction to the disciplines of architecture and landscape architecture and planning with an emphasis on the physical artifact and its formal and cultural context. Prereq: Not open to students with credit for 200, 1210, 2300E, Arch 1210 (200), 2300, o

LARCH2310	Introduction to Design	Introduction to the design of the physical environment through the exploration of form, space, and order using drawing and modeling techniques. Prereq: Not open to students with credit for 1410, 151, Arch 1410 (202), or Arch 2310. Cross-listed in Arch.
LARCH2367	Making and Meaning of the American Landscape	Overview and interpretation of influential figures, policies, programs, cultural forces, and environmental factors that have shaped the American landscape since the Revolutionary War. Prereq: English 1110 (111) or 110, or equiv. Not open to students wit
LARCH2420	Workshop II: Landscape Technologies	Introduction to techniques and technologies of landscape architectural implementation at the site scale, with a focus on schematic level documentation, materials and construction Prereq: 2410. Not open to students with credit for 321 or 624.
LARCH2930	Design Studio III: Social Dynamics	Continuation of the second-year Landscape Architecture design studio sequence, with a focus on urban and suburban sites within the typological framework of campuses, complexes and communities. Prereq: 2920 (252). Not open to students with credit for 254.
LARCH3440	Workshop IV: Advanced Landscape Technologies	Advanced techniques and technologies of landscape architectural implementation, with a focus on site infrastructure. Prereq: 3430 and Math 1118 (117) or 1151 (151), or permission of instructor. Not open to students with credit for 322 and 323.
LARCH5620	History & Theory: Parks	Contemporary history and theory of landscape architecture practice and criticism, with an emphasis on evaluating conceptual, formal and performative aspects of designed landscapes. Focus on parks. Prereq: Not open to students with credit for 603.
LARCH5630	History & Theory: Urbanism	Contemporary history and theory of landscape architecture practice and criticism, with an emphasis on evaluating conceptual, formal and performative aspects of designed landscapes. Focus on Urbanism.
LARCH6420	Workshop II: Landscape Technologies	Introduction to techniques and technologies of landscape architectural implementation at the site scale, with a focus on schematic level documentation, materials and construction. Prereq: 6410 and Grad standing. Not open to students with credit for 702.
LARCH6440	Workshop IV: Advanced Landscape Technologies	Advanced techniques and technologies of landscape architectural implementation, with a focus on site infrastructure. Prereq: 6430, and Grad standing. Not open to students with credit for 620, 622, 626, 670, 672, and 702.
LARCH7500	Landscape Materials Exploration	Advanced graduate study of landscape materials. Prereq: 6440 or 626. Repeatable to a maximum of 6 cr hrs or 2 completions.
LAW8100	Employment Law	State and federal regulation of the employment relationship with primary focus upon minimum wage and overtime compensation, workers' disability and unemployment compensation, safety and health, retirement and pension security, and wrongful discharge. Pre
LAW8403	Ethical Issues	Focuses on ethical issues, changing professional/consumer rights, and Interprofessional cooperation; limited to students in education, law, medicine, nursing, social work, bio-medical sciences, and allied health professions. Prereq: Not open to students
LAW8606	Land Use Planning Law	Zoning, subdivision controls, and an introduction to municipal planning; topics vary, may include eminent domain, state and regional planning, government development, and private land use controls. Prereq: Not open to students with credit for 648L.
LAW8896.26	Seminar: Critical Race Theory	Issues surrounding race and gender are critiqued in this course from a sociological, historical, political, economic and legal perspective.
LAW8896.46	Sem: Lawyering and Social Movements	Examines the complex and dynamic relationship between law, lawyers, and social movements.
LAW8896.48	Sem: Disaster Law	This seminar explores the emerging field of disaster law, focusing on disaster prevention, emergency response, compensation & insurance, environmental protection, human rights, and community recovery.
MBA6261	Global Environment of Business	Political, economic, social and technological forces shaping today's global business environment. Prereq: Enrollment in MBA or WPMBA program, or permission of instructor. Not open to students with credit for 820.
MECHENG2030	Dynamics	Dynamics of particles and rigid bodies; linear and angular motion; work and energy; and single degree of freedom vibration analysis. Prereq: 2010 (410) or 2010H (210H) or 2040. Not open to students with credit for 430.
MECHENG4505	Introduction to Nuclear Science and Engineering	Discussion of nuclear energy and nuclear radiation; sources, methods of utilization, and projections for future engineering uses. Prereq: Math 2173, 2177, 2255 (255), or 2415 (415); and Physics 1251 (133), or permission of instructor. Not open to student
MECHENG4510	Heat Transfer	A study of the fundamentals of conduction, convection, and thermal radiation energy transfer with engineering applications. Prereq: 3503 (504) or 3504, and MechEng-BS student (no pre-majors); or permission of instructor. Not open to students with credit

MECHENG4536	Nuclear Reactor Systems	Introductory course covering concepts of nuclear power reactor systems, thermal and mechanical design aspects, and economics of nuclear power plants. Prereq: 4505 (505) or NuclrEn 4505 (505); or permission of instructor. Not open to students with credit
MECHENG4904	ME Capstone Design III: Humanitarian Projects	Third course of 2-semester senior capstone series. Complete work on humanitarian project. Emphasis on detailed design, prototype, evaluation, and documentation. Prereq: 4904.01, and enrollment as MechEng-BS student (No ME pre-majors can enroll in this co
MECHENG5339	Simulation Techniques for Dynamic Systems	Introduction and use of software tools for dynamic system modeling, control system analysis, and design. Application to real world dynamic systems, with emphasis on model development and validation, parameter identification, and results presentation. Pre
MECHENG5374	Smart Materials and Intelligent Systems	Macromechanical modeling of smart materials including piezoceramics, magnetostrictives, shape memory alloys, magnetorheological fluids, and active polymers. Constitutive and system-level modeling. Design of smart dynamic systems. Prereq: 3360 (571) or 33
MECHENG5502	Engineering Thermodynamics	Technical elective in Engineering Thermodynamics including energy analysis, non-reacting and reacting gas mixtures, combustion, psychrometrics, chemical and phase equilibrium, thermoeconomics and applications. Prereq: 3501 (501) or 3502, or equiv. Not op
MECHENG5530	Internal Combustion Engines	Design and operating characteristics of contemporary internal combustion engines, induction/exhaust breathing, boosting, variable valvetrains, combustion and knock, fuel economy, alternative fuels, and advanced powertrains. Prereq: 3501 or 3502 (502), or
MECHENG5539	Applied Computational Fluid Dynamics and Heat Transfer	Introduces basic concepts in Computational Fluid Dynamics (CFD) and Computational Heat Transfer (CHT), teaches thermo-fluid analysis of engineering systems, and enhances understanding of fluid flow and heat transfer. Prereq: 3501 or 3502 (502), and 3503
MECHENG5541	Heating, Ventilating, and Air Conditioning	Analysis of components and systems for heating, ventilating and air-conditioning. Prereq: 4510 (510), or Grad standing in MechEng. Not open to students with credit for 641.
MECHENG5682	Fundamentals of Product Design Engineering	Fundamentals of the product design process, from concept creation to final implementation, including product architecture and design for manufacture and assembly. Prereq: Sr or Grad standing in Engineering, or permission of instructor. Not open to studen
MECHENG7538	Advanced Nuclear Reactor Thermal Hydraulics	Advanced course focusing on heat transfer and fluid flow applications in LWR systems with an emphasis on essential thermal hydraulics phenomena related to reactor safety. Prereq: 6537 (737) or NuclrEn 6537 (737), or permission of instructor. Not open to
MECHENG7777	Risk and Reliability for Digital Instrumentation and Control Systems	Modeling of digital instrumentation systems used in nuclear power reactor systems for reliability, safety, risk, and, security assessment. Prereq: 4505 (505) or NuclrEn 4505 (505), or permission of instructor. Not open to students with credit for NuclrEn
MECHENG8230	Nonlinear Dynamics	Analytical, geometric, and perturbation methods for study of nonlinear mechanical systems, and the dynamical phenomena that arise in nonlinear systems including stability, bifurcations, and hysteresis. Prereq: 7250 (731), or Grad standing in Engineering,
MECHENG8372	Fault Diagnosis in Dynamic Systems	Covers the theory and application of fault diagnosis in multi-domain dynamic systems. Theory and case studies drawn from industrial applications. Prereq: 7380 (780), ECE 4551, 5551, 750, AeroEng 4521, or 720, or permission of instructor. Not open to stud
MEDDIET4200	Management in Medical Dietetics	The study of the principles of food management systems, including food procurement, food distribution, environment management, facility design, and introductory financial controls in noncommercial foodservice segments. Prereq: HumnNtr 310 and 420. Not op
MEDDIET4500	Health Promotion and Community Nutrition	Study of community needs assessment, national nutrition policy, design and evaluation of programs and cultural factors to promote the health and nutritional status of the community. Prereq: 3100. Not open to students with credit for 637.01.
MEDDIET4900	Nutrition Assessment	Methods of gathering, interpreting, and reporting nutrition assessment data. Prereq: HumnNtr 310, EEOB 232, Zoology 232, or equiv. Not open to students with credit for 546.
MEDDIET6200	Community Nutrition and Health	Methods of discovering problems in community nutrition and practical application of nutrition information for improvement of the nutritional and health status of a diverse population. Prereq: 6300 or Concur. Not open to students with credit for 858.
MICRBIO5150	Microbial Ecology	A study of microbial functions, interactions and diversity as influenced by biological, chemical, and physical factors in the environment. Prereq: Micrbio 4000 (Micrbio 509) or 4100 (520). Not open to students with credit for 664.

MICRBIO5536	Food Microbiology Lecture	Microorganisms in relation to the production, processing, and handling of food with emphasis on food transmitted pathogens and minimizing public health risks. Prereq: 4000 (509), 4100 (520), or permission of instructor. Not open to students with credit f
MOLGEN3300	General Plant Biology	Plant structure and function; growth and development; diversity, reproduction, and evolution of lower and flowering plants; people, the biosphere, and plant diversity. Prereq: Biology 1101 (101), 1113 (113), or 1113H (115H). Not open to students with cr
MOLGEN5735	Plant Biochemistry	Focus on biochemical processes unique to plants, including photosynthesis, respiration, carbon fixation and carbohydrate metabolic networks, cell wall and lipid synthesis, and nitrogen and sulfur assimilation for macromolecular synthesis. Prereq: Biochem
NRSADVN4240	Concepts in Community Health Nursing	Study of community health nursing theory and principles applied to the nursing care of individuals, families, groups, communities, and populations. Prereq: 2440, 2780, and 3430, or permission of instructor. Not open to students with credit for Nursing 50
NRSRPT8490	Health Promotion in the Age of Personalized Health Care	Critical analysis of social determinants of health contributing to health disparities, their synthesis with theories of health behavior, and development of strategies to improve health outcomes. Prereq: Admission to the DNP program, or permission of inst
NUCLREN4505	Introduction to Nuclear Science and Engineering	Discussion of nuclear energy and nuclear radiation; sources, methods of utilization, and projections for future engineering uses. Prereq: Math 2173, 2177, 2255 (255), or 2415 (415); and Physics 1251 (133), or permission of instructor. Not open to student
NUCLREN4536	Nuclear Reactor Systems	Introductory course covering concepts of nuclear power reactor systems, thermal and mechanical design aspects and economics of nuclear power plants. Prereq: 4505 (505) or MechEng 4505 (505); or permission of instructor. Not open to students with credit f
NUCLREN5735	Nuclear Power Plant Operations	Introduction to power plant systems, regulatory requirements, integrated plant operations, and emergency responses. Prereq: 4505 (505) or MechEng 4505 (505); or Grad standing; or permission of instructor. Not open to students with credit for 735 or 745.
NUCLREN5776	Nuclear Fuel Cycle and Radioactive Waste Management	Review of the nuclear fuel cycle and radioactive waste management, including uranium mining, milling, conversion, enrichment, fuel fabrication, reactor operations, reprocessing, waste treatment, and disposal. Prereq: 4505 (505) or MechEng 4505 (505); or
NUCLREN6536	Nuclear Reactor Systems and Analysis	Intermediate-level course covering thermal and mechanical design aspects of nuclear power plants. The thermodynamics of operating nuclear power plants (BWRs and PWRs) are emphasized. Prereq: 4505 (505) or MechEng 4505 (505); and 3501 or 3502 (502), or eq
NUCLREN6537	Nuclear Reactor Thermal Hydraulics	Focuses on heat transfer and fluid flow applications in nuclear power reactor systems, including heat transfer in LWR fuel rods, coolant, and reactor internals. Prereq: 6536 (736) or MechEng 6536 (736), or equiv, or permission of instructor. Not open to
NURSING5112	Community-Based Nursing Preparedness for Disaster Surge	Overview of community-based nurse's role in population-based preparedness for, response to, and recovery from disaster surge incidents. Prereq: Sr or Grad standing, or permission of instructor.
NURSING6110	Health Literacy	Examination and analysis of issues of low health literacy, including populations at risk, research, measurement tools, writing in plain language; health communication techniques; and organizational approaches. Prereq: Grad standing in Health Sciences Pro
NURSING7500	Health Policy and Advocacy	Analysis of the U.S. health care delivery system and the policy making process, with an emphasis on the social, political and economic factors affecting the delivery of Nursing services. Prereq: Grad standing in Nursing, or permission of instructor. Not
PHILOS2400	Political and Social Philosophy	Philosophical bases of social and political institutions and practices; analysis of such fundamental conceptions as rights, justice, equality, political obligation, and civil disobedience. Prereq: English 1110.xx or 1110.xxH, or equiv. Not open to studen
PHR7090	Health Literacy	Examine and analyze issues of low health literacy, including populations at risk, research, measurement tools, writing in plain language; health communication techniques; and organizational approaches. Prereq: Grad standing in Health Sciences Professions
PHYSICS1103	World of Energy: Forces, Electricity, Magnetism, Machines	An examination of the physical concepts related to energy, including force, electricity, magnetism, and motors. Uses the hands-on discovery mode of instruction. Intended for non-science majors. Prereq: Not open to students with credit for 103. GE nat sc
PHYSICS2300	Intermediate Mechanics I	Vectors and kinematics; foundations of Newtonian mechanics; momentum, work, and energy; conservative and nonconservative forces; potentials; angular momentum; rotation about a fixed axis; rigid body motion; noninertial systems and fictitious forces. Prer
PHYSICS2301	Intermediate Mechanics II	The special theory of relativity; relativistic kinematics; relativistic momentum and energy. Introduction to quantum systems; photons; the Bohr atom; matter waves. Prereq: Math 2153 or 2173 (254) or above, and a grade of C+ or above in 2300 (261). Not o

PLNTPH5010	Phytobacteriology	Taxonomy, molecular biology, physiology, and ecology of plant-associated bacteria that interact with plants, especially those that cause disease and affect plant health. Video-linked to Wooster. Sp Sem. Prereq: 3001 and 3002, or 6001 (401), or permission
PLNTPH5120	Diseases of Ornamental Plants	Biology and integrated control of important diseases of ornamental plants. Sp Sem. Prereq: 3001 (401) and 3002, or 6001, or permission of instructor. Not open to students with credit for 501.
PLNTPH5604	Capstone Course: Problem-Based Studies in Plant Health	Students will be presented with a current plant health problem from the industry. They will gather diverse information from consultants, synthesize novel solutions, and develop implementation plans. Prereq: Jr, Sr, or Grad standing in PlntPth, Entmlgy, o
POLITSC3115	Introduction to the Policy Process	Introduction to the workings of policy-making processes within governments, and the use of social science reasoning to evaluate and improve the content of policies. Prereq: Not open to students with credit for 305.
POLITSC3450	Ethics and Public Policy	Contemporary approaches to public policy evaluation and their ethical foundations, including efficiency, security, rights, welfare, and equity. Prereq: Not open to students with credit for 304.
POLITSC4219	European Political Development	Uses experience of France, Germany, Great Britain, and Italy as foundation for understanding the emergence, functioning, and sustainability of different types of political regimes over time. Prereq: Not open to students with credit for 529.
POLITSC4282	The Politics of Income Inequality	Introduces fundamental politics of income inequality and redistribution, including social policy development, redistributive policy differences between countries, and popularity of differing welfare programs. Prereq: Not open to students with credit fo
POLITSC4285	The Comparative Politics of the Welfare State	Analyzes different kinds of welfare capitalism including social, economic, and political considerations shaping welfare policy; and contemporary welfare reform as an exercise in reallocation, reorganization, and budget-cutting. Prereq: Not open to studen
POLITSC4330	Global Governance	Examination of emergence and form of global governance, including questions of legitimation, democratization, and enforcement; as well as collective security, humanitarian intervention, and proliferation. Prereq: Not open to students with credit for 556.
POLITSC4331	The United Nations System	Activities and potential of the United Nations system in promoting economic well-being, environmental management, resource sharing, social justice, and control of violence. Prereq: Not open to students with credit for 551.
POLITSC4332	Politics of Globalization	Examines globalization's origins, impacts on human welfare, and political conflicts that arise from it, including actions of governments, multinational corporations, and the anti-globalization movement. Prereq: Not open to students with credit for 557.
POLITSC4380	Political Analysis of International Economic Relations	Examines the relationship between political and economic events in the international system; topics include global interdependence, inequality, scarce resources, and periphery nation strategies. Prereq: Not open to students with credit for 553 or 553H.
POLITSC4597.02	Political Problems of the Contemporary World	Critical political problems of industrialized and developing societies, including governmental legitimacy, conflict and violence, social welfare, equality, and economic development. Prereq: Jr or Sr standing. Not open to students with credit for 597.02,
POLITSC4910	Business-Government Relations	Explores the relationships between business and government, including topics ranging from regulatory politics and legislative lobbying, to trade politics and multinational corporations, to business ethics. Prereq: Not open to students with credit for 511
POLITSC5124	Urban Politics	The study of political problems facing the cities, including community power, poverty, welfare, urban renewal, urban education, law enforcement, and violence. Prereq: Not open to students with credit for 614.
POLITSC7280	Comparative Political Economy	A graduate-level course designed to survey contemporary theories on the interaction between economic policies, domestic institutions, the international economy, and their consequences on the macroeconomy. Prereq: Not open to students with 1 completion fo
POLITSC7281	The Political Economy of Income Inequality, Volatility, and Mobility	Examines patterns, political and institutional foundations, and consequences of income inequality, volatility, and mobility, plus dynamic aspects of income distributions. Prereq: Not open to students with credit for 781.
POLITSC7330	International Organization: Global Governance	Examination of global governance in such terms as changing political, legal, and normative contexts; security, economic, and environmental issues; state and non-state actors; and tools such as force, discipline, and law. Prereq: Not open to students with
POLITSC7334	International Organization: Rationalist Approaches	Comprehensive view of international governmental, non-governmental, and business organizations; their roles in solving problems such as poverty, war, pollution; particular attention to the United Nations system. Prereq: Not open to students with credit f
POLITSC7880	The Field of Political Economy	The modern field of political economy; the interaction of markets and politics as well as the use of the tools of economics to explain social behavior. Prereq: Not open to students with credit for 780 or Econ 780.

PORTGSE2798.10	Contemporary Issues in Brazil: Cultural, Environmental, & Racial Politics in the SE & NE Regions	Consists of lectures on special topics by the faculty of University of the UNESP-SJRP, and of ACBEU/Salvador, fieldtrips, and survival Portuguese classes. In Salvador, the course will explore some of the contemporary advances and challenges of the people
PSYCH1200	Applied Psychology: Human Behavior in the Wild	Examines how psychological concepts & phenomena are applied in real world contexts, such as law, medicine, social communities, education, sports, business & engineering. It will introduce constructs & research in applied psychology with a focus on domains
PSYCH4525	Psychology of Personal Security: Global and Local Perspectives	Surveys the diverse psychological literature on personal security, a key ingredient in psychological well-being. Prereq: 1100. Not open to students with credit for 525.
PSYCH7708	Psychology of Judgment and Decision Making	Introductory graduate course in the psychology of judgment and decision making, including applications to health, law, economics, environmental issues, and social, cognitive, and clinical psychology. Prereq or concur: Grad level course in statistical met
PUBAFRS2120	Public Service and Civic Engagement	Explores how students learn to be engaged citizens, concepts related to citizenship and leadership, and how to incorporate these concepts into their lives and the lives of others with whom they interact. Prereq: Not open to students with credit for 240.
PUBAFRS2150	Introduction to Nonprofit Organizations	Introduces students to the world of nonprofit organizations, in particular those whose missions address social issues and public service. Prereq: Not open to students with credit for 337 or ArtsSci 337.
PUBAFRS3000	Public Policy Analysis	Introduction to analytical techniques employed at policy formulation, implementation, and evaluation stages of public policy analysis process; strengths and weaknesses of techniques; development of related research strategies. Prereq: Econ 2001.01 or 200
PUBAFRS3140	Nonprofit Management and Governance	Survey and analysis of nonprofit organization management and governance, in particular those whose missions address social issues and public service. Prereq: Not open to students with credit for 594 (WI 2011 only).
PUBAFRS5400	Planning for Housing	Housing - including its uses, meaning, design, and role. The creation of a range of housing to support growth and revitalization of cities and regions. Prereq: Not open to students with credit for CRPlan 320, 752, or 5400. Cross-listed in CRPlan.
PUBAFRS5600	Science, Engineering, and Public Policy	Presents the history of the interactions between science, engineering, and public policy in the United States and in the context of global concerns (e.g. climate change, competitiveness), inquires into how various federal government, universities, & corp
PUBAFRS5760	Managing in the Political Environment	Introduction to public policy process and stakeholder approaches to issue management; strategic options and policy tools (political action committees, advocacy, and image advertising), state policy incentives, and international relations. Prereq: Not ope
PUBAFRS6000	Public Policy Formulation and Implementation	Overview of the public policy process and the historical and contemporary context in which policy making and implementation are carried out in the United States at the federal, state and local levels. Prereq: Not open to students with credit for 801.
PUBAFRS7505	Wicked Policy Problems	Elective course examines "wicked" policy problems, or policy problems that require attention to multiple causal factors (e.g. economic, financial, political, social, cultural, technological).
PUBAFRS7506	Workforce Planning and Policy	Review of national level workforce systems; examination of technical aspects of workforce planning in nat'l and state policy contexts; planning governmental investments in education and workforce infrastructure using actual govt agency data.
PUBAFRS7509	Disasters: Preparedness and Response	Introduction to planning, policy and management issues that arise when disaster strikes, and the roles of government, non-profits, communities and individuals in emergency preparedness by examining a variety of recent natural and human-made disasters, bot
PUBAFRS7535	Regulation and Deregulation	Examine the strengths and limitations of economic and social regulation, the occasion for and evolution of their policy development, and the prospects for regulation, deregulation, and re-regulation in the U.S. economy. Prereq: Not open to students with
PUBAFRS7570	Public Management Information Systems	Critical study of the design and administration of management information systems for the public and nonprofit sectors. Prereq: Not open to students with credit for 821.
PUBAFRS7573	Public Affairs Methods	Explores quantitative and/or qualitative decision-making methods specific to public affairs context using statistics, economics, public budgeting, finance, policy, and modeling theories. Prereq: 6070, or permission of instructor. Repeatable to a maximum
PUBAFRS7920	Capstone: Public Economics	Students integrate the knowledge and skills gained throughout the MA/MPA program by applying theory to practice through an in-depth Public Economics analysis of a defined topic or a specific organization. Prereq: 6000 (801), 6070 (820 & 822), 6080 (804),
PUBHEHS4530	Food Safety and Public Health	Principles and practice of food safety; transmission, inactivation and control of foodborne pathogens, hazards, toxins and allergens; risk assessment, sanitation, and pest control in foods. Cross-listed in FdScTe 4536.
PUBHEHS6305	Principles of Environmental Health for Professionals	Survey of environmental influences on human health and strategies for prevention. Prereq: Enrollment in MPH program.

PUBHEHS7350	Special Topics in Environmental Health Sciences	Opportunity for students to pursue a particular environmental health interest that is not available through existing topical offerings. Repeatable to a maximum of 12 cr hrs or 4 completions. This course is graded S/U.
PUBHEHS7365	Principles of Risk Assessment	Introductory course that includes discussion of a variety of topics in human exposure and related risk assessment. Prereq: Not open to students with credit for 831.
PUBHEHS7899	Seminar in Environmental Health Sciences	Seminar on topics that are relevant to students enrolled in programs in the division of environmental health sciences. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.
PUBHEHS8340	Molecular Techniques for Environmental Health Sciences	Practical introduction to molecular techniques, as applied to research in environmental health sciences. Prereq: Not open to students with credit for 835.
PUBHEHS8899	Doctoral Seminar in Environmental Health Sciences	Doctoral level seminar on topics that are relevant to students enrolled in the PhD program in health environmental health sciences. Repeatable to a maximum of 9 cr hrs or 9 completions. This course is graded S/U.
PUBHEPI7830	Phytochemicals in Human Health: Crops to the Clinic	Covers the function and control of phytochemicals in plants, the function of phytochemicals in human health, delivery of phytochemicals through foods in the diet, strategies when designing studies examining foods for health, and policy and sustainability
PUBHHBP3510	Role of Behavior in Public Health	Introduction to concepts of health behavior and its role in public health; social determinants of health; applications to selected community health problems and issues.
PUBHHBP7520	Community Health Assessment	Models of community health assessment; skills in identifying, analyzing and integrating information concerning community resources and needs. Prereq: Enrollment in Public Health, and Grad standing; or permission of instructor.
PUBHHBP7544	Fundamental Determinants of Population Health and Implications for Public Health	Presents the ideas that population health is determined by factors outside of health care and individual behavior occurs within a social context. Prereq: Enrollment in Public Health, and Grad standing; or permission of instructor. Not open to students wi
PUBHHBP7562	Theoretical Approaches to Health Behavior Change in Public Health Applications	Major theories drawn from social and behavioral science literature, pertinent to understanding and addressing problems in health behavior. Prereq: Enrollment in Public Health, and Grad standing; or permission of instructor.
PUBHHMP7624	Health Economics for Experienced Professionals	Designed for public health professionals who wish to enhance their knowledge of the economic principles that drive the health care system. The course will introduce you to the use of economic analysis and economic evaluation for healthcare decision making
PUBHHMP7679	Quality & Patient Safety	Examination of quality management and quality measurement in health care with emphasis on patient safety. Repeatable to a maximum of 3 cr hrs. This course is graded S/U.
PUBHHMP7681	Advanced Health Services Operations Management	Selected topics in health services operations management, such as operations strategy, quality management, process design, materials management, and facility location. Prereq: 7680, or permission of instructor. Not open to students with credit for 881.
PUBHLTH2010	Introduction to Global Public Health	Public health concepts examining the philosophy, purpose, history, organization, functions, and results of public health practices domestically and internationally. Presents the pressing global public health concerns of the 21st century. Prereq: Not open
PUBHLTH3189.01	Field Experience in Global Public Health: India	Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in India; instructions in a classroom setting on an Indian campus and through field trips. Prereq: English 1110 (110), go
PUBHLTH3189.02	Field Experience in Global Public Health: China	Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in China; instructions in a classroom setting on a Chinese campus and through field trips. Prereq: Major or minor in PubH
PUBHLTH3189.03	Field Experience in Global Public Health: Japan	Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in Japan; instructions in a classroom setting on a Japanese campus and through field trips. Prereq: English 1110 (110), a
PUBHLTH3189.04	Field Experience in Global Public Health: Finland and Estonia	Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in Finland and Estonia; instructions in a classroom setting and through field trips.
PUBHLTH6189.01	Field Experience in Global Health	Placement in a public health agency or related site for supervised international practice experience. Prereq: Enrollment in public health degree program, and permission of instructor. Repeatable to a maximum of 6 cr hrs or 6 completions. This course is g
PUBHLTH7350.01	Topics in Applied Public Health Practice: Preparedness	Includes theory and applications relevant to specific rubrics of applied public health practice, with a theme of public health preparedness and planning. Repeatable to a maximum of 12 cr hrs or 6 completions. This course is graded S/U.
RELSTDS4873	Contemporary Religious Movements in Global Context	Examination of contemporary religious movements within the context of larger political, cultural, and economic processes, including post-colonialism, modernization, and globalization. Prereq: One course in CompStd, RelStds, or IntStds; or Grad standing;
RURLSOC1500	Introduction to Rural Sociology	Principles of society, major social institutions, and social change; emphasizes social changes in rural life, rural organizations, population, and family living. Au, Sp Sems. Prereq: Not open to students with credit for 105, Sociol 101, or 201. GE soc s

RURLSOC4500	Leadership and Community Development	The application of leadership principles and best practices to community development. Sp Sem. Prereq: 1500 (105) or Sociol 101, or 5 qtr cr hrs/3 sem cr hrs of related social sciences, or permission of instructor. Not open to students with credit for 54
RURLSOC5500	Diffusion of Innovations	Examine the sociological processes involved in disseminating new ideas and technologies in U.S. and developing nations. Assess the consequences of new technologies for communities, households, and individuals particularly in rural contexts. Au Sem. Prer
RURLSOC5570	Women in Rural Society	Women's role in rural society from a comparative perspective, focusing on agriculture, the environment, informal sector, and household production, both in developing and developed countries. Prereq: 6 sem cr hrs in RurlSoc, Sociol, or related Social Scie
RURLSOC5580	Social Impact Assessment	Examine the social and cultural impacts of planned change on groups and communities. Prereq: Not open to students with credit for 688.
RURLSOC6500	Rural Poverty	Evaluation of the factors which create and maintain poverty and inequality, with focus on the rural U.S., developing nations, and the comparative analysis of spatial inequalities. * Sp Sem (odd years). Prereq: 15 cr hrs in RurlSoc or related social scien
RURLSOC7550	Rural Community Development in Theory and Practice	Theoretical foundations of rural community development; contemporary community development issues; change processes, strategies, and practices. * Sp Sem. (odd years). Prereq: Grad standing. Not open to students with credit for 888.
RURLSOC7600	Concepts and Theories in Rural Sociology	Examines the sociological significance of "rurality" and the conceptual perspectives applied to major substantive areas in rural sociology, such as community, environment, and agriculture. * Au Sem (odd years). Prereq: Grad standing. Not open to students
RURLSOC8500	Development Sociology in Theory and Practice	Overview of sociological principles, theories and research in the evolution of international development and globalization practices, objectives, and policies. Contemporary issues in development and globalization. * Sp Sem (even years). Prereq: Grad sta
SOCIOL1101	Introductory Sociology	Fundamental concepts of sociology and introduction to the analysis of social problems and interactions (e.g. wealth, gender, race, inequality, family, crime) using sociological theories. Au, Sp, Su Sems. Prereq: Not open to students with credit for 1101H
SOCIOL2202	Social Problems and Public Policy	Analysis of contemporary social problems such as inequality, discrimination, and crime. Prereq: Not open to students with credit for 202.
SOCIOL2300	Sociology of Culture and Popular Culture	Provides a sociological understanding of culture including the influence of culture on inequality and social change and sociological interpretations of popular culture. The course will examine how sociologists define and empirically study culture; theoret
SOCIOL2309	Introduction to Law and Society	Introduction to the law as a social institution, including the origins of law and its relationship to other social institutions, social control, and social change. Prereq: Not open to students with credit for 309.
SOCIOL2367.02	Urban Social Problems	The place of the city in social organization; the emergence, nature, and problems of modern urbanism; projects based in census and field data. Prereq: English 1110 (110) or 1111 (111) or equiv. Not open to students with credit for 367.02. GE writing and
SOCIOL2391	Social Organization of Communities	Development of the modern community; approaches to the study of communities; significance of processes and value systems for community organization and disorganization. Prereq: Not open to students with credit for 391.
SOCIOL3302	Technology and Global Society	Social aspects of technology, social change, and technological development; underdevelopment and the global economy. Prereq: Not open to students with credit for Sociol 302.
SOCIOL3407	Social Change	Examines dynamic forces and key actors engaged in cultural, economic, and political change around the world in sociological perspective; processes of globalization, democratization, and development. Prereq: Not open to students with credit for 407.
SOCIOL3463	Social Stratification: Race, Class, and Gender	The study of social inequality with a focus on inequalities by class and status, race and ethnicity, and gender. Prereq: Not open to students with credit for 463. GE soc sci human, nat, and econ resources course.
SOCIOL3464	Work, Employment, and Society	Analysis of work organization; control and authority relationships in the workplace; comparative studies of work and labor movements; industrial decline; automation. Prereq: Not open to students with credit for 464.
SOCIOL3630	Medical Sociology	Sociological analysis of the distribution of disease, and the nature of health care institutions, health professions, and the delivery of health care services. Prereq: Not open to students with credit for 630.
SOCIOL4672	Theory, Substance, and Techniques of Demography II	Continuation of survey of population studies covering models of population growth, population theories, migration, population estimates and projections, population problems, and policy decisions. Prereq: 4671 (671) and Math 1151 or 1152 (152), or equiv.
SOCIOL5503	Social Change in Central and Eastern Europe	Examines and discusses various approaches to social change, focusing on Central and Eastern Europe and its transition to the post communist era. It deals with political, economic, and cultural aspects of life in the region. Prereq: 3 cr hrs at 2000-3000

SOCIOL5563	Global Inequality and Poverty	Focus on globalization, world-wide inequalities, and poverty in sociological perspective with particular attention to the causes, correlates, and consequences of global poverty and inequality. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or
SOCIOL5629	Health Disparities in Social Context	Analysis of the social determinants of health and health disparities with a focus on stratification/inequality. Includes variations in health disparities over the life course. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400) level or above. Not open
SOCIOL7748	Comparative Methods in Sociology	Basic review of methods of comparative analysis as used in the study of social change. Prereq: 6655. Not open to students with credit for 748.
SOCIOL7761	Social Stratification	A survey of major theories, issues, and empirical literature on societal stratification and inequality with particular focus on the United States. Prereq: Not open to students with credit for 761.
SOCIOL7790	Social Organization of the Community	An examination of the nature, structures, processes, and trends of social organization of modern communities. Prereq: Not open to students with credit for 790.
SOCIOL7791	Sociological Methods of Community Analysis	Methods, techniques, sources of data, and objectives of community analysis. Prereq: Not open to students with credit for 791.
SOCIOL7806	Social Movements	Explores how and why social movements arise and their impact on society. Prereq: Grad standing, or permission of instructor. Not open to students with credit for 806.
SOCIOL7820	Sociology of Education	Special problems will be considered in different semesters, including urban education, student movements, bureaucratic-professional problems, school-community relations, and innovation. Prereq: Not open to students with credit for 820.
SOCIOL7841	Sociology of Urban Sub-Communities	Examination of society and culture of sub-communities such as ethnic and racial neighborhoods, suburbia; generalization about the patterns of integration with larger systems. Prereq: Not open to students with credit for 841.
SOCIOL7862	Complex Organizations	Analysis of bureaucratization, structure, boundary problems, resource allocation, organizational change, and conflict. Prereq: Not open to students with credit for 862.
SOCIOL8592	Structural Sociology	Key concepts, issues, recent trends in the study of social structure with special emphasis on formal social organizations, social stratification, comparative social systems, groups, and research methods. Prereq: Grad standing in Sociol. Not open to stude
SOCIOL4591S	Building Community Capacity: A Service Learning Approach	This service learning course will explore the basic concepts, methods, and approaches used when sociology is put into practice in urban, organizational settings. Au semester. Prereq: 3 cr hrs in Sociology at 2000-3000 (200-400).
SOCWORK2110	Prevention & Youth Development through Sport, Recreation, and Play	Focuses on how characteristics of environmental contexts contribute to the development of social/academic/health-related problems among youth. Knowledge and skills of generalist social work practice are applied to guide the design and delivery of preventi
SOCWORK3201	Social and Economic Justice: Strategies for Social Work	Introduces students to social and economic justice and injustice and presents multiple strategies to pursue social justice, with a particular emphasis on the role of advocacy. Prereq: Enrollment in SocWork major. Not open to students with credit for 521.
SOCWORK5018	Interdisciplinary Case Management for Working with Underserved Populations	Provides students the opportunity to collaborate with students from other health care professions including pharmacy, health and rehabilitation sciences, nursing, medicine and social work. The students will use a problem-based learning approach to patient
SOCWORK5019	Cross-National Community Development	Addresses different variations of community-based interventions in Central America and the US; examines the main challenges of community based intervention for social development; challenges traditional conceptions of development employing a value-based f
SOCWORK7530	Needs Assessment and Program Design	Introduces program development and design, the skills for program implementation and management, needs assessment and program design for collective decision-making in organizations, systems and communities. Prereq: 6201 (720 and 721), 6301 (733), 6401 (7
SOCWORK7550	Community Practice and Development	Prepares students for social work practice in community settings including engagement, assessment, intervention, evaluation in community practice. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771), and 6501 (744 or 745 or 746); or 7400 and 7500.
SOCWORK7570	Policy Analysis and Social Legislation Process	Covers the legislative process of social welfare policy making and provides analytical skills of policy analysis to help legislators with policy choices at both state and federal government levels. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 77
SOCWORK7640	Integrative Seminar I on Community and Social Justice	Focuses on multiple social systems associated with social and economic inequality. Social intervention and social work practice are critically reviewed for advancing community and social justice. Prereq: 6201 (720 and 721), 6301 (733), 6401 (770 and 771)
SOCWORK8201	Knowledge Building	Examines the role of theory and elements of knowledge development for social work, social policy, and social change. Prereq: Doct standing. Not open to students with credit for 900.01.

SOCWORK8202	Theories of Change for Social Problem Interventions	Develops students' knowledge of theory and research concerning processes of change with individuals and larger systems, occurring with or outside of planned interventions. Not open to MSW students, but could be open to thesis master's students in other di
SPANISH2332	Introduction to Andean and Amazonian Cultures	Historical formation of contemporary societies in the Andean and Amazonian regions, including their ethnic, social, and cultural features; taught in English. Prereq: Not open to students with credit for 332. GE cultures and ideas and diversity global stu
SPANISH4606	Advanced Business Spanish	An in-depth study of the Hispanic economic, social, and cultural environment as it relates to business. Prereq: 3403 (403) or 3403H (403H), or permission of instructor. Not open to students with credit for 606. FL Admis Cond course.
VETPREV7772	Wildlife Disease Ecology	Overview of the role of wildlife disease in ecological interactions. Discussion of disease detection and diagnosis, as well as management of major classes of wildlife diseases. Prereq: 1st (second semester), 2nd, 3rd, or 4th yr standing in Veterinary med
WGSST3302	Engendering Peace and Conflict	Analysis of the gendered dimensions of political, ethnic, and economic situations involving armed struggle, security issues, and peace-building worldwide. Topics include terrorism, militarization, refugees, diplomacy, truth commissions, etc.
WGSST3320	Topics in Women's, Gender and Sexuality Studies	Provides in-depth analyses of specific topics in the areas of difference and diversity, culture and representation, and political contexts and social change. Prereq: Not open to students with credit for 320. Repeatable to a maximum of 6 cr hrs.
WGSST8810	Topics in Race, Sexualities, and Social Justice	Advanced in depth studies in the theories of race, ethnicity, nationality, sexuality, and class. Repeatable to a maximum of 6 cr hrs or 6 completions.
ARCH2300E	Outlines of the Built Environment	Introduction to the discipline of architecture and landscape architecture and planning with an emphasis on the physical artifact and its formal and cultural context. Honors section. Prereq: Honors standing. Not open to students with credit for 200, 1210,
BUSMHR4520E	Leading High Performance Ventures	Focuses on concepts, frameworks, skills, and tools that enable a start-up to become a sustainable enterprise that creates jobs. Option available for honors students to do extra work for Honors credit. Prereq: 2500 (290) and Econ 2001.01 (200). Not open t
CRPLAN4900E	Plan Making	Plan creation focuses on working with real-world clients. Planning knowledge and skills will be applied to generate creative, innovative, and practical solutions. Prereq: Honors standing, 3100 (340) or 3100E, and acceptance into CRPlan BS major; or permi
DESIGN5600E	Design Matters	Students in this interdisciplinary design/build studio have the opportunity to work on site in a collaborative design environment with a local non-profit organization. Prereq: Honors standing, or Grad standing, or enrollment in Design major, or permissio
HISTORY4700E	Readings in the History of Environment, Technology, and Science	Advanced readings on selected topics in Environmental History, Technology and Science. Prereq or concur: Honors standing, and any 3000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit for 598, 598H,
HISTORY4705E	Research Seminar in the History of Environment, Technology, and Science	Advanced research and writing on selected topics in Environmental History, Technology and Science. Prereq or concur: Honors standing, and any 3000-level History course, and English 1110.xx; or permission of instructor. Not open to students with credit fo
LARCH2300E	Outlines of the Built Environment	Introduction to the disciplines of architecture and landscape architecture and planning with an emphasis on the physical artifact and its formal and cultural context. Honors Section. Prereq: Honors standing. Not open to students with credit for 200, 1210
LARCH2367E	Making and Meaning of the American Landscape	Overview and interpretation of influential figures, policies, programs, cultural forces, and environmental factors that have shaped the American landscape since the Revolutionary War. Prereq: Honors standing, and English 1110 (111) or 110, or equiv. Not
LARCH5620E	History & Theory: Parks	Contemporary history and theory of landscape architecture practice and criticism, with an emphasis on evaluating conceptual, formal and performative aspects of designed landscapes. Focus on parks. Prereq: Honors standing.
LARCH5630E	History & Theory: Urbanism	Contemporary history and theory of landscape architecture practice and criticism, with an emphasis on evaluating conceptual, formal and performative aspects of designed landscapes. Focus on urbanism. Prereq: Honors standing.
POLITSC4597.02	Political Problems of the Contemporary World	Critical political problems of industrialized and developing societies, including governmental legitimacy, conflict and violence, social welfare, equality, and economic development. Prereq: Jr or Sr standing or permission of instructor. Not open to stude
PUBHLTH3189.0	Field Experience in Global Public Health: India	Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in India; instructions in a classroom setting on an Indian campus and through field trips. Prereq: English 1110 (110), an
PUBHLTH3189.0	Field Experience in Global Public Health: China	Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in China; instructions in a classroom setting on a Chinese campus and through field trips. Prereq: Major or minor in Publ

PUBHLTH3189.03	Field Experience in Global Public Health: Japan	Global public health concepts and associated metrics; role of cultural, social, economic, and environmental factors on public health in Japan; instructions in a classroom setting on a Japanese campus and through field trips. Prereq: English 1110 (110), a
SOCIOL1101E	Introduction to Sociology (Honors Embedded)	Fundamentals of sociology and introduction to the analysis of social problems and social interactions, (e.g., wealth, gender, race inequality, family, crime) using sociological theories. Au, Sp, Su Sems. Prereq: Honors standing. Not open to students wit
HCS4401	Sustainable Landscape Design II	Study of the proper selection of plant materials for sustainable design and function in the landscape, identifying the "right plant for the right place" to develop ecologically appropriate landscapes. Prereq: 2401, or 204 and HCS 404. Not open to student
BIOLOGY1103	Living Chemistry	Explores the nexus between biology and chemistry to advance understanding of biology; a sequel to Biology 1101. Also considers the relationship of biology to current issues. Prereq: Biology 1101 (101), or concur: Chem 1100. GE nat sci bio course.
BSGP2000	Theory and Foundations of Bioethics	Explores moral concerns and ethical decision-making in medicine and health care. Topics include health care reform informed consent, quality of life decisions, decisions to allow to die, rationing, fertility, and scarcity of resources. In particular, we wi
BSGP6000	Bioethics Theory and Foundations	Offers a philosophical survey of the moral foundations of contemporary bioethical theories and health care policies.
BUSMGT7234	Global Sourcing II: Managing for Effective Global Sourcing	Focuses on effective day-to-day management of a global network of suppliers and vendors. Among other topics, students examine techniques for supplier/vendor selection (e.g. reverse auctions) and ongoing management (e.g. scorecards). Prereq: Enrollment in
CONSYSM1205	Introduction to Construction Systems Management	Overview of residential, commercial, industrial, institutional and transportation sectors of the construction industry and the role of the construction manager. Introduction to planning, scheduling, estimating, safety and ethics in construction. Prereq
EDUTL5731	Teaching Technology Education I	Development of lessons and units of study for technology and engineering education programs. Includes the study of historical, sociological, and psychological bases and the development of a philosophy of technology and engineering education. Prereq: Comp
EDUTL8303	Literacies and Technologies	Explores the history, practices, and politics around the intersection of literacy and technology in a range of sociocultural contexts and communities, including schooling. Prereq: Not open to students with credit for 902.
EHE2213	Experiencing Urban Education	Examination of the multi-ethnic character of the urban community and the unique educational problems prospective teachers should be conscious of in order to be more effective when working with minorities. Repeatable to a maximum of 12 cr hrs.
ESEADM7354	Educational Leadership, Organizational Dynamics, and School Culture	Introduction to educational leadership, organizational theory, school culture and climate, and administrative decision-making. This is a core course in administrator certification. Prereq: 6350 or EduPL 6350 (846). Not open to students with credit for Ed
ESWDE8961	Comparative Workforce Development Policy	Provides a detailed overview of national workforce development policies across the world. Prereq: Not open to students with credit for EduPAES 961.
HDFS4630	Etiology and Models of Human Development	From a multidisciplinary perspective, this course investigates underlying genetics and biology as well as overlying family, community, and macro-level environmental factors that interact to shape differences in human thought and behavior. Prereq: 2600, o
HISTORY3710	European Environmental History	Environmental history of Europe from ancient to modern times. Sometimes this course is offered in a distance-only format. Prereq: English 1110.xx and any History 2000-level course, or permission of instructor. GE historical study and diversity global stu
HISTORY5700	Special Topics in the History of Environment, Technology, and Science	Advanced course in the History of Environment, Technology, and Science. Topics Vary. Prereq or concur: Any 3000-level History course, and English 1110.xx; or Grad standing; or permission of instructor. Repeatable to a maximum of 12 cr hrs.
HUMNNTR7765	Nutritional Assessment of Individuals and Populations	Role of nutrition assessment in the planning, surveillance and monitoring of individuals, populations and health interventions.
ISE3410	Facilities Planning	Principles and methods for design and analysis of facility layouts; defining requirements, facility location, process and schedule design, activity relationships, material handling, personnel requirements. Prereq: 2000, 2500, or equiv. Not open to studen
ISE3990.01	Foundations of Production System Design	Overview of core Industrial Engineering subjects, relating them to the tools of Six Sigma and essential sub-systems that comprise the Toyota Production System. Prereq: 2000 (500), Math 2174, 2177, 2568, or 4568 (568 or 571), and Statistics 3450, 3460, or
ISE5840	Market Engineering and Applications	Introduction to market engineering concepts and applications to contemporary market design problems such as resource allocation, information aggregation, and decentralized control. Prereq: Introductory microeconomics, calculus, and statistics or equiv, o

PORTGSE2332	Andean and Amazonian Studies	Introduction to the historical formation of the contemporary societies of the Andean and Amazonian regions. Exploration of the ethnic, social, and cultural features and mapping of the historical, economic, and political process in the regions. Prereq: No
BSGP7830	Phytochemicals in Human Health: Crops to the Clinic	Covers the function and control of phytochemicals in plants, the function of phytochemicals in human health, delivery of phytochemicals through foods in the diet, strategies when designing studies examining foods for health, and policy and sustainability
CIVILEN5700	Urban Transportation Demand Forecasting	Introduction and applications of quantitative demand forecasting in urban transportation. Prereq: 3700 (570), or Grad standing in CivilEn, or permission of instructor. Not open to students with credit for 775 or CRPlan 5700 (775). Cross-listed in CRPlan.