Ball State University Inventory of Sustainability Courses, 2018-19

AC-1: Academic Courses

Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
ANTH	105	Introduction Biological Anth	X		Introduces students to human variation over space and time; its genetic, developmental, environmental, and theoretical bases; the human life cycle; primatology; the anthropoid fossil record, and the relevance of these for an understanding of human health, adaptation, and human diversity.	Sciences and Humanities	Anthropology	UG
ANTH	312	Ecological Dims of Culture	X		Explores the system of relationships between human populations and their environments focusing on cultural behavior. Uses studies of societies from ancient to modern times, models and theories from ecology and anthropology, and considers both applied and theoretical perspectives. Prerequisite: any one of ANTH 101, 103, 105, 111; or permission of the instructor.	Sciences and Humanities	Anthropology	UG
ANTH	512	Eco Dim of Culture	X		Explores the system of relationships between any human population and its environment, focusing on cultural behavior. Uses studies from ancient to modern times and models and theories from ecology and anthropology; considers both applied and theoretical perspectives. Prerequisite: an introductory cultural anthropology course or permission of the instructor. Not open to students who have credit in ANTH 312.	Sciences and Humanities	Anthropology	GR
ANTH	560	Special Topics in Cult Anth	X		Detailed analysis of a special problem in cultural anthropology such as culture and global warming, anthropology and architecture, urban anthropology, or anthropology and food. May be repeated for different topics. A total of 6 credits may be earned. Not open to students who have credit in an undergraduate course covering the same topic.	Sciences and Humanities	Anthropology	GR
ANTH	590	Topics in Cultural Change	X		Surveys from various perspectives the major concepts and processes of culture change, including globalization and its effects on cultures and individuals. A total of 6 credits may be earned, but no more than 3 in any one semester or term. Not open to students who have credit in ANTH 460.	Sciences and Humanities	Anthropology	GR
ARCH	103	Architectural Design Studio	X		Introduction to architectural form manipulation skills in both green field and built environments. Focus on design moves linking concepts of site, schematic building structure, materials, and forces of human habitation. Design reasoning and spatial thinking, vocabulary, concept formulation, use of precedents, and basic investigative skills are linked to basic ways of building in both individual and collaborative design exercises. Prerequisite: graduate standing or permission of the program director.	Architecture and Planning	Architecture	UG
ARCH	201	Architectural Design	X		Introduction to the architectural design sequence. Projects focus on conceptual architectural design and design methodologies in small and intermediate-scale projects, introduction of architectural technology, research, analysis, and programming. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG
ARCH	202	Architectural Design	X		Conceptual architectural design and design methodologies in large-scale projects; introduction of architectural technology, research, analysis, and programming. Workshops in the exploration and development of visualization and communication skills at all stages of the design process. Prerequisite: ARCH 201. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
ARCH	214	Arch Build Tech 1	X		Methods and materials of architectural construction. Emphasizes interface of material selections and construction technology in the design, production, and construction process. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG
ARCH	229	History of Architecture 1	X		A survey of the major movements in Western architecture and urbanism from antiquity through the nineteenth century, and an introduction to developments in vernacular and high-style architecture outside the West in precolonial and/or post-colonial periods. Prerequisite: ARCH 100. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design; HP minors or permission of the department chairperson.	Architecture and Planning	Architecture	UG
ARCH	251	Social and Env Justice in Dsgn	X		Introduces students to the essential role that architecture plays in promoting socially and environmentally just communities by acknowledging the values of human rights, social equity, and the dignity of every human being. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG
ARCH	273	Environmental Systems 1	X		Introduction to environmental systems in architecture with emphasis on passive interventions. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG
ARCH	301	Architectural Design	X		Integration of all facets of design including design, research, programming, technology, function, human behavior, scheduling, time management, communication, use of materials, and systems. Workshops in the further exploration and development of visualization and communication skills at all stages of the design process. Prerequisite: ARCH 202. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG
ARCH	302	Architectural Design	X		A rigorous in-depth exploration of a selected topic in architectural design. Design studio and seminar in theories and principles related to the selected topic. Prerequisite: ARCH 301. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG
ARCH	304	Architectural Design Studio	X		Design of increasingly complex projects with documentation of structure, materials, construction methods, and life safety. Continued emphasis on concept development vis-a-vis historical and contemporary architectural thought and project context in all its dimensions. Reinforcement and application of sustainability principles including passive/active systems and day-lighting. Prerequisite: graduate standing or permission of the program director.	Architecture and Planning	Architecture	UG
ARCH	314	Arch Build Tech 2	X		Methods and materials of architectural construction. Emphasizes interface of material selections and construction technology in the design, production, and construction process. Production of construction documentation. Prerequisite: ARCH 214. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
ARCH	329	History of Architecture 2	X		Survey of the movements and major figures in architecture and design from the late nineteenth century to the present, with consideration given to the social and cultural context of design ideas. Prerequisite: ARCH 229. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design; HP minors or permission of the department chairperson.	Architecture and Planning	Architecture	UG
ARCH	340	Intro to HP for Architects	X		The introduction of historic preservation in the context of architectural practice. Students will become familiar with the significant public and private Preservation agencies and organizations, along with the roles they play in the Preservation movement. The legal basis of preservation will be surveyed, as well as the process for documenting, designating, and protecting historic properties. Preservation treatment and re-use options will be discussed in light of conservation, sustainability and cultural continuity. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG
ARCH	373	Environmental Systems 2	X		Application of the principles of physics to the design and engineering of environmental systems in buildings and technologies of active intervention. Prerequisite: ARCH 273. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design.	Architecture and Planning	Architecture	UG
ARCH	400	Comprehensive Arch Studio	X		Architecture studio involves architectural design explorations requiring integrated evaluations and decision-making in the design process. Projects will demonstrate consideration and integration of environmental and structural systems, environmental stewardship, technical documentation, accessibility, site conditions, life safety, and building envelope systems and assemblies. Prerequisite: ARCH 302. Parallel: ARCH 420. Open only to B. ARCH majors.	Architecture and Planning	Architecture	UG
ARCH	429	Appl Cultl to Desgn Plng	X		Explores how to use social, cultural, technical, and economic information to establish design criteria. Examines how to apply this knowledge to create a framework for design. Prerequisite: fourth-year standing or permission of the department chairperson.	Architecture and Planning	Architecture	UG
ARCH	440	Intro to Pres	X		This course presents the history, philosophy and current practice of heritage presevation. Students examine the roles of significant public, private and non-profit preservation agencies and organizations. The legal basis of preservation is studied, as well as the process for documenting, designating and protecting heritage places. Preservation treatment and re-use options are examined in light of conservation, sustainability and cultural continuity concerns. Prerequisite: permission of the program director. Open only to HP minors or by permission of the HP director.	Architecture and Planning	Architecture	UG

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
ARCH	441	Pres Policy	X		This course examines the structure and function of international, federal, state and local laws and programs governing heritage preservation activities. Planning and economic development aspects of preservation practice are studied in the context of conservation and protection of heritage places. Prerequisite: permission of the program director. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design; HP minors or permission of the HP director.	Architecture and Planning	Architecture	UG
ARCH	447	Pres Tech	X		An investigation of the materials and systems of construction used in historic buildings. Students examine contemporary technology used to document, analyze and diagnose building conditions as a basis to formulate interventions for the stewardship of historic structures. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design; HP minors or permission of the HP director.	Architecture and Planning	Architecture	UG
ARCH	473	Pres Current Issues	X		This course provides an in-depth investigation of complex social, cultural and political case studies in contemporary heritage preservation. A foundation is laid for development of individual philosophies and ethics regarding preservation practice. Prerequisite: permission of the program director. Open only to B. ARCH; BA/BS architecture; BA/BS environmental design; HP minors or permission of the HP director.	Architecture and Planning	Architecture	UG
ARCH	502	Env Dsgn Site Context Studio	X		Design projects address surrounding environmental parameters in creating strategies, programs, and buildings, while integrating multiple issues of design thinking and context characteristics in multiple, diverse sites. Sustainability principles in design are introduced and applied with emphasis on merging environmental concerns with human desires and needs.	Architecture and Planning	Architecture	GR
ARCH	509	Readings Soc and Env Justice	X		Selected readings and follow-up discussion in the topic area as guided by the course instructor. Prerequisite: graduate standing or permission of the program director. Parallel: ARCH 510 and 511.	Architecture and Planning	Architecture	GR
ARCH	510	Field Stud Soc and Env Justice	X		Off-campus study in the topic area as approved by the course instructor. Prerequisite: graduate standing or permission of the program director. Parallel: ARCH 509 and 511.	Architecture and Planning	Architecture	GR
ARCH	511	Doc in Soc and Env Justice	X		Written report resulting from a field study in the topic area. Prerequisite: graduate standing or permission of the program director. Parallel: ARCH 509 and 510.	Architecture and Planning	Architecture	GR
ARCH	540	Intro to Pres	X		This course presents the history, philosophy and current practice of heritage presevation. Students examine the roles of significant public, private and non-profit preservation agencies and organizations. The legal basis of preservation is studied, as well as the process for documenting, designating and protecting heritage places. Preservation treatment and re-use options are examined in light of conservation, sustainability and cultural continuity concerns. Prerequisite: permission of the program director. Not open to students who have credit in ARCH 440. Open only to MSHP and HP certificate students or by permission of the HP director.	Architecture and Planning	Architecture	GR

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
ARCH	541	Pres Policy	X		This course examines the structure and function of international, federal, state and local laws and programs governing heritage preservation activities. Planning and economic development aspects of preservation practice are studied in the context of conservation and protection of heritage places. Prerequisite: permission of the program director. Not open to students who have credit in ARCH 441. Open only to MSHP and HP certificate students or by permission of the HP director.	Architecture and Planning	Architecture	GR
ARCH	551	Contemporary Issues in Arch	X		Introduction to the essential role that architecture plays in promoting socially and environmentally just communities by acknowledging the values of human rights, social equity, and the dignity of every human being. Exploration of contemporary, social, cultural, political, and economic discourse in establishing design criteria and creating frameworks for design interventions. Understand the ethical issues involved in the exercise of professional judgment in architectural design.	Architecture and Planning	Architecture	GR
ARCH	570	Intro Environmental Systems	X		Fundamentals of passive and active building environmental systems (heating, cooling, ventilating, lighting, acoustics, fire protection, plumbing, electrical/communications, circulation). An overview of environmental forces and human and material/assembly responses to such forces with consideration of historical context and current concerns and a focus on energy, water, and material resource utilization.	Architecture and Planning	Architecture	GR
ARCH	571	App Environmental Systems	X		Application of passive and active building environmental systems (heating, cooling, ventilating, lighting, acoustics, fire protection, plumbing, electrical/communications, circulation). Systems, equipment, and assemblies that mitigate/enhance environmental forces with consideration of historical context and current concerns and a focus on energy, water, and material resource utilization.	Architecture and Planning	Architecture	GR
ARCH	602	Integrated Arch Dsgn Studio	X		Synthesis of a wide range of variables from diverse and complex systems into an integrated architectural solution. Students demonstrate their ability to comprehend site conditions, structural, environmental, and building systems and assemblies, accessibility and life safety, environmental stewardship, and technical documentation. Scope and type of project will require applied research methodologies and an integrated evaluation and decision-making process across multiple systems to inform the design process.	Architecture and Planning	Architecture	GR
ARCH	618	Applied Systems Thinking	X		Advanced course in the selection, design, and integrated application of structural systems, environmental systems, building systems, and project assemblies in architecture. Emphasis on whole building thinking from site evaluation to building performance. Exploration and application of advanced technologies and inventive building systems, while committed to research and development of sustainable, affordable and equitable practices.	Architecture and Planning	Architecture	GR

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
ARCH	624	Applied Arch Bldg Tech	X		Exploration of methods and materials of architectural construction with a focus on applied learning, combining theoretical knowledge with practical skills and technical training. Practical applications in construction drawing, building material selection and assembly, building envelope systems, estimating techniques, and computer applications. Production of technical documentation related to design studio project. Exploration of critical topics for the future of the built environment and natural resources to use design and technology to create architecture that contributes to a more humane and environmentally responsible built world.	Architecture and Planning	Architecture	GR
ARCH	632	High Performance Buildings		X	Consideration of high-performance buildings, including aspects such as green design, carbon-neutral design, net-zero-energy design, and sustainability. Prerequisite: graduate standing or permission of the program director.	Architecture and Planning	Architecture	GR
ARCH	633	Adv Tech for Grn Bldng		X	Investigations of green technologies including solar and wind energy, energy conservation, water management, building envelope design, lighting, building-integrated photovoltaic and wind energy systems, LED lighting, smart building systems, and sensor networks. Prerequisite: graduate standing or permission of the program director.	Architecture and Planning	Architecture	GR
ARCH	639	Contemp Hist Theory of Arch	X		Introduction to the historical and theoretical movements, technologies, and practices in architecture and urbanism from the advent of the Industrial Revolution up to and including the 21st century. Consideration given to the social and cultural context of design ideas with a focus on global developments in vernacular and high style architecture.	Architecture and Planning	Architecture	GR
ARCH	644	Theories of Sustainability		X	Students explore ideas and assumptions behind green building and sustainable design. Philosophies and concepts of nature, design and technology are investigated and discussed. Students develop and share their understanding of sustainability and green building grounded in both current and established theories. Prerequisite: graduate standing or permission of the program director.	Architecture and Planning	Architecture	GR
ARCH	646	Urban Dsgn Hist Theory Prac	X		Introduces the principles, practices, and theory of urban design. Considers the history of urban form, exploring the design of major cities and urban centers. Students develop an understanding of significant case studies while systematically studying physical form, regional influences, and how the public realm is shaped by social, economic, political, and cultural forces. Focus on issues of equity, identity, sense of place, smart growth, and sustainable place making.	Architecture and Planning	Architecture	GR
BIO	112	Principles of Biology 2	X		Examines the diversity, evolutionary relationships, ecology, and physiology of organisms in the animal kingdom with an introduction to the protozoans. Emphasizes structure and function at the organismal level, classification, and phylogenetic relationships. Lecture and laboratory.	Sciences and Humanities	Biology	UG
BIO	216	Ecology	X		Effects of physical and biotic conditions on the distribution, abundance, and diversity of plants and animals. Dynamics of ecological systems at population, community, ecosystem, landscape, and global levels, and from an evolutionary perspective. Practical applications of ecological knowledge to environmental problems. Prerequisite: BIO 112.	Sciences and Humanities	Biology	UG

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BIO	220	Ecological Issues 21st Century	X		Fundamental concepts of ecology, including interactions between organisms and their environment, population/community dynamics, and structure/ function of ecosystems. Application of concepts to current ecological issues (e.g., species extinction, human population dynamics, human food production systems, natural resource depletion, and global environmental change). Intended for non-biology majors. Not open to students who have credit in BIO 216. Open only to non-biology majors.	Sciences and Humanities	Biology	UG
BIO	254	Biology in the Social Context	X		Designed to foster understanding of the interactions between and among human biological and social systems. Emphasizes biological concepts as they relate to health and behavior. Prerequisite recommended: college level introductory biology. Open only to social work or family and consumer sciences majors, or by permission of the department chairperson.	Sciences and Humanities	Biology	UG
BIO	316	Methods in Ecology	X		Introduction to scientific study designs, measurements, data analysis, and the logic of inference as applied to ecological research. Focuses on a field research project that culminates in a written report and an oral presentation. Prerequisite or parallel: BIO 216.	Sciences and Humanities	Biology	UG
BIO	416	Population Ecology	X		Presents fundamental principles of population growth and regulation, including both within-species and between-species interactions. Implications for over-population, endangered species, and pest and game management are discussed. Laboratory includes both experimental studies and computer simulation exercises. Prerequisite: BIO 216.	Sciences and Humanities	Biology	UG
BIO	418	Comm and Ecos Ecol	X		Principles of ecological organization at the community and ecosystems levels. Emphasizes the processes that influence the structure and function of communities and ecosystems. Laboratory includes field and lab studies of plant and animal systems. Prerequisite: BIO 216.	Sciences and Humanities	Biology	UG
BIO	420	Field Biology of Distant Areas	X		Includes study of the sciences peculiar to selected geographic areas. Ecology, flora, and fauna. Travel may be by air. Seminars may be scheduled regularly throughout the course. Registration fee may include travel charges as well as the general fee. Prerequisite: permission of the department chairperson. A total of 12 credits may be earned.	Sciences and Humanities	Biology	UG
BIO	482	Aquatic Microbiology	X		Microorganisms indigenous to nonpolluted and polluted aquatic ecosystems. Emphasizes nutrient cycling and use of microorganisms as indicators of pollution. Morphology, physiology, and ecology of specific organisms. Lecture and laboratory. Prerequisite: BIO 313.	Sciences and Humanities	Biology	UG
BIO	516	Population Ecology	X		Presents fundamental principles of population growth and regulation, including both with-species and between-species interaction. Implications for over-population, endangered species, and pest and game management are discussed. Laboratory includes both experimental studies and computer simulation exercises. Prerequisite: BIO 216. Not open to students who have credit in BIO 416.	Sciences and Humanities	Biology	GR
BIO	520	Field Biology of Distant Areas	X		The species peculiar to selected geographic areas. Ecology, flora, and fauna. Travel may be by air. Seminars may be scheduled regularly throughout the course. Registration fee may include travel charges as well as the general fee. Prerequisite: permission of the department chairperson. A total of 12 credits may be earned.	Sciences and Humanities	Biology	GR

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BIO	582	Aquatic Microbiology	X		Microorganisms indigenous to nonpolluted and polluted aquatic ecosystems. Emphasizes nutrient cycling and the use of microorganisms as indicators of pollution. Morphology, physiology, and ecology of specific organisms. Lecture and laboratory. Prerequisite: BIO 313. Not open to students who have credit in BIO 482.	Sciences and Humanities	Biology	GR
BIO	656	Ecosystem Ecology	X		Principles and application of ecosystem ecology. Provides students with an understanding of concepts in modern ecosystem ecology and with an in-depth analysis of ecosystem components, processes, and factors that control them. Prerequisite: BIO 216 or equivalent, or permission of the instructor.	Sciences and Humanities	Biology	GR
BIO	657	Multiv Analy and Envir Data	X		Introduction to multivariate statistical techniques and technological tools necessary to evaluate the literature and to carry out original research in the environmental sciences. Prerequisite: BIO 448 or 548 or equivalent, or permission of the instructor.	Sciences and Humanities	Biology	GR
BOT	380	Forestry	X		General course in forestry with emphasis on forest policy, ecology, and management. Current issues are discussed with particular reference to their social, political, and environmental implications. Lecture and laboratory.	Sciences and Humanities	Biology	UG
BOT	442	Economic Botany	X		The cultivation, processing, environmental requirements, and use of plants and plant derivatives for food, drugs, dwellings, clothing, and power.	Sciences and Humanities	Biology	UG
BOT	480	Plant Ecology	X		Factors affecting the distribution and abundance of plants. Patterns, structure, and development of plants at the individual, population, and community level. Laboratory provides experience with ecological experimentation at the physiological, population, and community levels. Prerequisite: BIO 216 or permission of the instructor.	Sciences and Humanities	Biology	UG
BOT	481	Aquatic Botany	X		The collection and identification of nonvascular and vascular plants from freshwater ecosystems. Emphasizes the morphology, physiology, and ecology of these plants to explain their distribution in nature. Class project and field trips may be used to demonstrate ecological relationships. Two Saturday field trips required. Prerequisite: BIO 210 or permission of the instructor.	Sciences and Humanities	Biology	UG
BOT	542	Economic Botany	X		The cultivation, processing, environmental requirements, and use of plants and plant derivatives for food, drugs, dwellings, clothing, and power. Not open to students who have credit in BOT 442.	Sciences and Humanities	Biology	GR
BOT	544	Plant Prop and Mgt	X		Practical experience in the different methods of plant propagation, care, and cultivation for use in the home, school, garden, and greenhouse. Diseases, pathogens, and pests of the plant.	Sciences and Humanities	Biology	GR
BOT	580	Plant Ecology	X		Factors affecting the distribution and abundance of plants. Patterns, structure, and development of plants at the individual, population, and community levels. Laboratory provides experience with ecological experimentation at the physiological, population, and community levels. Prerequisite: BIO 216 or permission of the instructor.	Sciences and Humanities	Biology	GR

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BOT	581	Aquatic Botany	X		The collection and identification of nonvascular and vascular plants from fresh water ecosystems. Emphasizes morphology, physiology, and ecology of these plants to explain their distribution in nature. Class project and field trips may be used to demonstrate ecological relationships. Prerequisite: BIO 112 or permission of the department chairperson. Not open to students who have credit in BOT 481.	Sciences and Humanities	Biology	GR
BUSA	300	Int Sustainability in Business		X	Offers interdisciplinary perspectives on issues forming the environmental context for business. The life-cycle concept frames the discussion of environmental management systems and standards, pollution prevention, and product and market issues. Includes lectures, readings, case studies, and student projects. Prerequisite: sophomore standing.	Miller College of Business	Miller College of Business	UG
CAP	101	Environment Design and Plan 1	X		Basic problem solving related to abstract and historical and contemporary problems in environmental design. Elements of space, form, function, and human use as they affect the natural and built environments.	Architecture and Planning	Coll of Architecture & Plan	UG
CAP	102	Environment Design and Plan 2	X		Basic problem solving related to abstract and historical and contemporary problems in environmental design. Elements of space, form, function, and human use as they affect the natural and built environments. Prerequisite: CAP 101.	Architecture and Planning	Coll of Architecture & Plan	UG
CHEM	627	Analy Chem in Env Sci	X		Survey of the development and implementation of modern analytical methods, particularly as they apply to the study of environmentally relevant systems. Techniques include gas and liquid chromatography, mass spectrometry, UV-visible absorption and fluorescence spectroscopy, electrochemistry and elemental analysis techniques such as AAS and ICP. Prerequisite: permission of the department chairperson.	Sciences and Humanities	Chemistry	GR
CM	303	Highway Construction 2	X		Highway construction methods and economic applications. Team development of construction scheduling and cost estimates for highway construction projects under closely simulated conditions. Prerequisite: CM 302 and 355.	Architecture and Planning	Construction Mgt & Int Design	UG
CM	315	Sustainable Construction		X	Provides detailed knowledge related to sustainable construction. Emphasis will be on green building rating systems, and course work includes case studies, guest speakers, field trips, investigation of green materials, and a term project.	Architecture and Planning	Construction Mgt & Int Design	UG
CT	300	Sustainability in Info Tech		X	A study of sustainability issues related to the field of information technology. Explores the environmental, economic, and human impact of information technology. Prerequisite: sophomore standing.	Miller College of Business	Info Systems/Operatns Mangmt	UG
ECON	311	Environmental Economics		X	Application of economic analysis to pollution, natural resource usage, and sustainability. "Sustainability" expands the concepts of economic growth and optimization to include a balanced set of goals that include environmental carrying capacity, social and intergenerational equity, and community values. Prerequisite: minimum grade of C in ECON 116 or 201 or permission of the instructor.	Miller College of Business	Economics	UG
ECON	351	International Economics	X		Examines international trade, finance, and commercial policy. Prerequisite: minimum grade of C in ECON 201.	Miller College of Business	Economics	UG

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ECON	485	Urban Economics	X		The systematic economic structure of cities and the component parts of that structure. Attention is given to the ways in which the economic structure of cities and regions obstructs or facilitates the attainment of the goals of the community. Prerequisite: minimum grade of C in ECON 201.	Miller College of Business	Economics	UG
ECON	511	Environmental Economics	X		The application of economic principles to environmental problems. Emphasizes application of the economist's decision-making model to environmental issues and the advantages and shortcomings of the economist's analysis. Prerequisite: ECON 201 or 509; 6 credits in natural resources and environmental management, NREM 101, or permission of the department chairperson. Not open to students who have credit in ECON 311; NREM 203.	Miller College of Business	Economics	GR
ECON	585	Urban Economics	X		The systematic economic structure of the city and its component parts. The ways in which the economic structures of cities and regions obstruct or facilitate the attainment of the goals of the communities. Prerequisite: ECON 201, 202. Not open to students who have credit in ECON 485.	Miller College of Business	Economics	GR
ECON	615	International Economics	X		Classical and modern theories of exchange rates, gains from trade, factor movements, international money markets, and barriers to trade. Includes analysis of international commercial policy. Prerequisite: ECON 201, 202 or equivalent, or permission of the department chairperson. Open only to students who have been admitted to a university graduate program.	Miller College of Business	Economics	GR
ECYF	202	Child and Family Wellness	X		Explore the concepts of wellness, emphasizing nutrition, health and safety as it applies to children and families. Increase awareness of the need for healthy environments and use of sustainable and age appropriate practices in environments with families and children.	Teachers College	Early Chilhd, Youth, Family St	UG
FCS	690	Sustain Des		X	Provides the graduate student the opportunity to learn sustainable theories and practices specific to apparel, merchandising, and interior design. Topics include ecological principles, consumer perspectives, process and practices, policy and performance assessments of various design methods and frameworks.	Miller College of Business	Management	GR
GCM	373	Graphics: Pack Constr and Des	X		Advanced applications in packaging. CAD packaging software will be explored. Topics include design, sustainability, layout, and fabrication of structural materials, multi-content packages, specialty boxes, and point of purchase displays. Prerequisite: GCM 283 or permission of the instructor.	Fine Arts	Art	UG
GEOG	120	Economic Geog of Globalization	X		A systematic approach to economic issues emphasizing local, regional, national, and global economic developments in the geographic setting.	Sciences and Humanities	Geography	UG
GEOG	150	Global Geography	X		A basic survey course emphasizing geographic facts and interdependencies between the developed and developing world. Particular emphasis is given to physical and social environmental interdependencies.	Sciences and Humanities	Geography	UG
GEOG	261	Intro to Sustainable Tourism		X	Examines the history, components, and spatial structure of tourism from an ethical standpoint in regard to environmental, socio-cultural and economic impacts. Introduces principles of sustainable tourism and their application to various types of tourism and geographical contexts.	Sciences and Humanities	Geography	UG

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GEOG	323	Tourism and Geography of Food	X		Surveys the origin, spatial diffusion, and cultural ecology of food crops and agriculture in the context of tourism and travel. Examines the globalization of regional foods as a cultural commodity and agricultural landscapes as tourist attractions.	Sciences and Humanities	Geography	UG
GEOG	491	Sustainable Tourism Develop		X	Discusses how to develop tourism destinations and activities that integrate sustainable economic development, accessibility, and indigenous cultural evolution with minimal impact on the environment. Includes site assessment, financial analysis, market forecasting, and impact assessment. Prerequisite: GEOG 261, 262; or permission of the instructor.	Sciences and Humanities	Geography	UG
GEOG	625	GIS for Environmental Science	X		Examination of techniques in Geographic Information Systems (GIS), with emphasis on data and analyses relevant to the environmental sciences. Course delivery includes both guided instruction and applied GIS projects focused on data collection, preparation, analysis, and reporting. Prerequisite: permission of the instructor.	Sciences and Humanities	Geography	GR
GEOL	101	Planet Earth Geol Environment	X		Introductory study of the materials, structure, and surface features of the earth; the processes responsible for their development; geologic hazards; and the application of geologic knowledge to mankind's environmental and resource problems.	Sciences and Humanities	Environ Geol Nat Res	UG
GEOL	105	Lab in Physical Geology	X		Practical study of minerals, rock, planemetric and topographic maps, fold and fault structures, geological maps, climate change, earthquakes, flooding, sustainability; local field trip. An introductory high school or college earth science course. Prerequisite: an introductory high school or college earth science course; permission of the department chairperson.	Sciences and Humanities	Environ Geol Nat Res	UG
GEOL	207	Environ Geology Geochem Cycles	X		Explores the geochemical cycling in the interior of the Earth and its effects on surface processes, the cycling of components crucial for humans and life in general such as water, carbon, and nitrogen, and the geologic cycling of hazardous chemicals such as heavy metals. Regularly scheduled laboratory. Prerequisite: CHEM 111; GEOL 101; or high school equivalents, or permission of the department chairperson.	Sciences and Humanities	Environ Geol Nat Res	UG
GEOL	416	Geology Hazards Environment	X		Applied geology for hazard and environmental problems. Properties and mechanics of rocks and soil; geologic materials in construction; erosion, mass wasting, subsidence; flooding, shoreline, seismic, volcanic, and other natural hazards. Dams, tunnels, mines, shoreline structures, and other special construction problems; groundwater engineering problems. Prerequisite: an introductory course such as GEOL 101, 207, 240; NREM 211 or EMHS 352; MATH 108 or high school equivalent, or permission of the department chairperson.	Sciences and Humanities	Environ Geol Nat Res	UG
GEOL	462	Env Geol in the Field and Lab	X		Provides development of research projects and instruction in field and laboratory techniques used in the collection and analysis of field samples. The techniques are applied to the study of local environment research projects and may include instruction on well probes and standard "wet" chemical techniques. Prerequisite: GEOL 207, 461 or 560.	Sciences and Humanities	Environ Geol Nat Res	UG

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
GEOL	516	Geol of Hazards and Env	X		Applied geology for hazard and environmental problems. Properties and mechanics of rocks and soil; geologic materials in construction; erosion, mass wasting, subsidence, flooding, shoreline, seismic, volcanic, and other natuaral hazards. Dams, tunnels, mines, shoreline structures, and other special construction problems; groundwater engineering problems. Prerequisite: an introductory course such as GEOL 101, 207, 240; NREM 211 or EMHS 352; MATH 108 or high school equivalent, or permission of the department chairperson. Not open to students who have credit in GEOL 416.	Sciences and Humanities	Environ Geol Nat Res	GR
GEOL	562	Env Geol in the Field and Lab	X		Provides development of research projects and instruction in field and laboratory techniques used in the collection and analysis of field samples. The techniques are applied to the study of local environment research projects and may include instruction on well probes and standard "wet" chemical techniques. Prerequisite: GEOL 207, 461 or 560. Not open to students who have credit in GEOL 462.	Sciences and Humanities	Environ Geol Nat Res	GR
HIST	204	US Environmental History	X		Designed to give students knowledge of resource use in the United States. Government policies and private enterprise practices of exploitation and conservation from settlement to the present are treated in historical perspective. Emphasizes the way resource use has shaped society. Not open to students who have credit in NREM 204.	Sciences and Humanities	History	UG
HONR	189	Inquiries in Global Studies	X		Interdisciplinary exploration of the commonalities and diversities in global culture, economy, history, politics, and society; emphasizes the non-European, non-North American world. Open only to Honors College students.	Honors College	Honors College	UG
HOSP	395	Food and Culture	X		Explores the relationships between agricultural practices, diet patterns, food procurement and distribution, and religious dietary doctrines from a national and global perspective. Emphasis on how culture, national and international policies, and belief systems shape food consumption patterns.	Miller College of Business	Management	UG
HSC	482	Environmental Health	X		Examines health issues, scientific understanding of causes, and possible future approaches to control of the major environmental health problems in industrialized and developing countries. The relationship of people to their environment, how it affects their physical well-being, and what they can do to influence the quality of the environment and to enhance the protection of their health are also emphasized. Basic concepts of the modes of transmission of environmental stressors from source or reservoir to host and methods of reducing their impact on human population are accentuated. Prerequisite: HSC 180.	College of Health	Nutrition and Health Science	UG
HSC	682	Environmental Health	X		Physical environment and its relationship to disease causation. Review of environmental health problems and their solutions. Areas of study include air and water pollution, food sanitation, disposal of human excreta and waste, radiation and occupational health problems, and risk. Not open to students who have credit in HSC 482.	College of Health	Nutrition and Health Science	GR

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
IDES	114	Sustainable Interiors		X	Focused on the examination and application of the appropriate sustainable/green principles in interior design. Emphasis will be on Leadership in Energy & Environmental Design for Contract Interiors Green Building Rating Systems (LEED-CI), a national certification program by the U.S. Green Building Council.	Architecture and Planning	Construction Mgt & Int Design	UG
IDES	115	Interior Materials and Appl	X		Study of interior materials, finishes, furniture, and architectural components. Covers floor, wall, and ceiling finishes, furniture, cabinetry, and case goods. Selection criteria, green design, cost, quality, application, sources, and specifications will be discussed and analyzed. Open only to interior design majors and minors.	Architecture and Planning	Construction Mgt & Int Design	UG
IDES	606	Visual Culture in Built Enviro	X		Provides an integrated survey of global interior environments and architecture, exploring significant design styles and movements from the mid-19th century through the present day. Explores Western and non-Western interior and architecture within the context of the arts, politics, business, technology, economics, the sciences, and social sciences.	Architecture and Planning	Construction Mgt & Int Design	GR
IDES	619	Environ Psychology Int Des	X		Explores how a space and building affect an occupant's behavior, well-being, and health. Discusses psychosocial responses to the built environment, analyzes the interaction between environments and human behavior and well-being, while exploring how individual differences related to age, gender, and cultural background impact that interaction. Provides proactive initiatives designed to minimize stress and maximize user satisfaction, helping designers to create more comfortable spaces that will both satisfy the needs of the intended occupants and expand the scope of design.	Architecture and Planning	Construction Mgt & Int Design	GR
LA	100	Intro Landscape Architecture	X		An introduction to landscape architecture: lectures, site observations, and environmental experiences that focus on landscape architectural practice, representative projects, philosophy, and areas of specialization within the field.	Architecture and Planning	Landscape Architecture	UG
LA	270	Environmental Systems	X		Qualitative investigations and analysis of the interrelationships between people and landscape systems. Studies include the assessment of ecological systems including land, water, climate, and biotic systems; influence of natural processes as they relate to the principles of landscape architectural design, planning and construction.	Architecture and Planning	Landscape Architecture	UG
LA	301	Housing and Community Design	X		Design projects focusing on social, political, economic, cultural, and environmental issues as they relate to land-planning and site design for housing developments and residential communities. Prerequisite: LA 202 and 280. Open only to LA majors.	Architecture and Planning	Landscape Architecture	UG
LA	302	Planting Design	X		Design problems focusing on the functional, ecological, and aesthetic uses of plants in the landscape. Prerequisite: LA 211 and 341. Open only to LA majors.	Architecture and Planning	Landscape Architecture	UG
LA	341	Plants 1	X		The study of woody and herbaceous plants, including plant identification and plant adaptation to urban and natural environmental conditions.	Architecture and Planning	Landscape Architecture	UG

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
LA	371	Sustainable Site Design		X	Interdisciplinary course examining theories, tools, and practices of sustainable site design and landscape planning. Connections are made between theories and green design movements; sustainable design projects are examined. Emphasis is placed on the interdisciplinary nature of sustainable design, collaboration, and site design processes for complex systems.	Architecture and Planning	Landscape Architecture	UG
LA	414	LA Engineering 4	X		Advanced methods of landscape architecture engineering and construction/implementation practices. Subjects include advanced applications for construction documentation, Building/Site/Land Information modeling (e.g., BIM); documented sustainable design criteria/guidelines/techniques (e.g., SITES); landscape construction management; and post construction evaluation. Course topics may include advanced sustainable site construction and landscape engineering applications for lighting, water, material selection, and landscape management. Prerequisite: LA 313 or permission of the instructor. Open only to LA majors.	Architecture and Planning	Landscape Architecture	UG
LA	430	Philosophy of Land Arch	X		Readings, seminars, and lectures in the background and development of historic and contemporary philosophies of landscape architecture. Includes discussions of design and environmental issues, land use, and professional ethics. Prerequisite: LA 221 or permission of the instructor.	Architecture and Planning	Landscape Architecture	UG
LA	471	Sustainable Land Systems		X	Interdisciplinary course addressing sustainability in relation to diverse resource issues. It explores regions and sites as parts of land systems; and landscape planning and design integration with these systems to promote sustainability. It focuses on resource harvesting and regeneration; environmentally responsible materials and technologies, sustainable planning and design, and building-site integration.	Architecture and Planning	Landscape Architecture	UG
LA	514	LA Engineering 4	X		Advanced methods of landscape architecture engineering and construction/implementation practices. Subjects include advanced applications for construction documentation, Building/Site/Land Information modeling (e.g., BIM); documented sustainable design criteria/guidelines/techniques (e.g., SITES); landscape construction management; and post-construction/-occupancy evaluation. Course topics may include advanced sustainable site construction and landscape engineering applications for lighting, water, material selection, and landscape management. Prerequisite: LA 313 or permission of the instructor. Open only to landscape architecture majors.	Architecture and Planning	Landscape Architecture	GR
LA	573	Environmental Systems	X		Qualitative investigations and analyses of and research in landscape systems. Studies include assessments of vegetation, climate, hydrology, soils, and surface geology as determinants of landscape architectural form; natural processes as they relate to the principles of landscape architectural construction.	Architecture and Planning	Landscape Architecture	GR

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
LSCM	480	Supply Chain Mgt Integ Project	X		Senior level capstone course requires students to plan, develop, and present a capstone project in operations and supply chain management. Topics include global manufacturing strategies, green movement and reversed logistics, lean Six Sigma, enterprise resource planning and implementation, process design--value stream mapping, and product costing. In addition to class meeting time, students will be required to meet in arranged times to complete a capstone project. Prerequisite: LSCM 361, 453, 460 or permission of the department chairperson. Open only to logistics and supply chain management majors.	Miller College of Business	Info Systems/Operatns Mangmt	UG
MATH	622	Environmental Statistics	X		Aims to provide an introduction to the types of statistical analyses used in environmental studies. Topics include collecting environmental data with special emphasis on inaccessible and sensitive data, population size estimation, sampling in the wild such as quadrat, recapture, transect and adaptive sampling, composite sampling, ranked set sampling, examining environmental effects by regression-type models, statistical verifiability of environmental standards and regulations, time series, longitudinal, spatial, and temporal methods for the environmental processes. Prerequisite: MATH 320 or permission of the department chairperson.	Sciences and Humanities	Mathematical Sciences	GR
MBA	600	Global Business Experience	X		Examines a strategic business problem for an organization with international offices/operations. Students will study relevant international business practices and culture, current practices related to the business problem presented, and theoretical underpinnings of those practices. Students will work in teams to create solutions for the client and may present findings during on-site international meetings. Prerequisite: full admission to a graduate program in the Miller College of Business. Open only to Miller College of Business students or by permission of the Executive Director of graduate programs.	Miller College of Business	Miller College of Business	GR
MBA	691	Global Strategic Management	X		Integrative application of business knowledge to managerial decisions and action that determine the long-run performance of organizations. Deals with legal and environmental issues and strategy formulation, and implementation in a global setting. Prerequisite: completion of 12 credits of MBA core courses; full admission to a graduate program in the Miller College of Business. Open only to Miller College of Business students or by permission of the director of graduate programs.	Miller College of Business	Miller College of Business	GR
METC	331	Global Climatology	X		Introduction to the dynamics of the global climate system. Emphasizes the physical processes that force spatial variability in climate, and the feedback mechanisms associated with global teleconnections and climate change. Prerequisite: METC 230.	Sciences and Humanities	Geography	UG

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
METC	334	Atmospheric Hazards	X		Examination of the causes, consequences, and spatial distribution of hazards deriving from or impacting the atmosphere. Both the physical properties and processes of natural hazards (e.g. hurricanes, tornadoes, biochemical) and the human actions and reactions to these hazards will be emphasized at the local, regional, and global scales. Prerequisite: METC 230.	Sciences and Humanities	Geography	UG
METC	531	Global Climatology	X		Introduction to the dynamics of the global climate system. Emphasizes the physical processes that force spatial variability in climate, and the feedback mechanisms associated with global teleconnections and climate change. Prerequisite: METC 230 or permission of the instructor. Not open to students who have credit in METC 331.	Sciences and Humanities	Geography	GR
METC	534	Atmospheric Hazards	X		Examination of the causes, consequences, and spatial distribution of hazards deriving from or impacting the atmosphere. Both the physical properties and processes of natural hazards (e.g. hurricanes, tornadoes, biochemical) and the human actions and reactions to these hazards will be emphasized at the local, regional, and global scales. Prerequisite: METC 230. Not open to students who have credit in METC 334.	Sciences and Humanities	Geography	GR
MKG	610	Business and Sustainability		X	Examines business activity from an input-process-output perspective. Addresses design, materials flows, production, distribution, usage, and end-of-life disposition of materials throughout the life cycle of products and services and their impacts on resources and the integrity of environmental, social, and economic systems necessary for long-term human activity and quality of life. Prerequisite: full admission to a graduate program of the university.	Miller College of Business	Marketing	GR
NREM	101	Environment and Society	X		Study of human roles in conservation resource management, environmental quality, and sustainable development. Effects of population and technology on environmental systems including air, energy, minerals, soil, water, vegetation, and wildlife. Environmental ethics, outdoor recreation, and public lands management are also covered. Laboratory and field activities.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	203	Decision-Making in Nat Res Mgt	X		Application of decision-making principles to natural resource management. Instruction in the use of basic microeconomic principles (investment, capital recovery, property rights, opportunity costs, discounting, compounding, prices) in practical resource management situations within the constraints of environmental laws and regulations. Uses simple algebraic and graphical tools.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	204	American Environmental History	X		Designed to give students knowledge of use of resources in the United States by treating, in historical perspective, government policies and private enterprise practices of exploitation and conservation from settlement to the present. Emphasizes the way use of resources has shaped society. Not open to students who have credit in HIST 204.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	205	Internatnl Natural Resources	X		An analysis of problems occurring as a result of development and use of natural resources worldwide. The role of resource management and conservation to enhance the carrying capacity of the earth. A case-study approach to the management of global environmental problems.	Sciences and Humanities	Environ Geol Nat Res	UG

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
NREM	304	Sustainable Agriculture		X	Natural resource use in agricultural systems with emphasis on principles of sustainability. Includes integrated pest management, permaculture, and other production practices that conserve soil, water, and biological resources. Field trips included.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	307	Env Mgt Developing Countries	X		Survey of challenges facing management of urban environments and the rural-urban interface in the developing nations of Asia, Africa, Latin America, and Pacific Oceania. Features interdisciplinary approach with frequent guest speakers to discuss existing and potential management, economic, technical, and policy solutions in their regional, cultural, and historic contexts.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	309	Human Dimensions Global Change	X		Systematic exploration of major topics of human and environmental change from local to global scales, including: population, energy, agriculture, industry, technology, urbanization, water, climate, natural hazards, socioeconomic systems, land use, trade, marginalized societies, and biodiversity. Prerequisite: junior standing; or permission of the instructor.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	331	Energy and Mineral Resources	X		Appraisal of the problems, prospects, and societal and technical issues surrounding the use of energy and mineral resources. Emphasizes environmental problems and ecoenergetics, consideration of the natural resource base, distribution and production problems, conservation, alternative energy systems, resource policy, and research.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	335	Renewable Energy Sustain Tech		X	Exploration of alternative/renewable energy systems (wind, solar, hydro, biomass, geothermal, fuel cells). Case studies of sustainable technology emphasize topics including industrial ecology (life-cycle analysis, design for the environment, clean manufacturing, and impact assessment) and appropriate technology applications in developing countries. Problem-solving applications using various approaches.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	357	Internat Community Development	X		Application of practical methods to problems of development in poor rural agrarian communities and environmental management in poor urban communities in Asia, Africa, and Latin America. Emphasizes face-to-face methodologies to the identification and development of workable solutions to resource and environmental problems of disadvantaged populations in developing nations.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	372	Applied Research Methods	X		Social science applications in natural resource and environmental management. These applications include quantitative and qualitative survey research designs, analysis of social data, and applications of survey results to political processes. Perspectives range from local to international.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	392	Environmental Interpretation	X		Develops skills and techniques necessary to the interpretation of ecological and environmental characteristics of earth systems. Emphasizes field work and creative presentation of concepts, and organization and management of interpretive programs including sites and facilities. Prerequisite: NREM 101 or its equivalent; junior standing.	Sciences and Humanities	Environ Geol Nat Res	UG

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
NREM	395	Teaching Environmental Ed	X		Opportunities for enriching instruction through environmental education in formal and non-formal educational settings. Studies conservation, outdoor and environmental education, including teaching techniques and instructional resources used in each. Prerequisite: NREM 101 or permission of the department chairperson.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	401	Forest Plan	X		Introduces students to the social, economic, and ecological forces that shape U.S. private forests. Takes an in-depth look at forest landowner values, attitudes, and perceptions of forests and linkages to management decision-making strategies and behaviors. Also introduces students to the skills they will need to interact with private forest landowners (PFLs) and forest management professionals. Students will develop forest stewardship plans based on interactions with PFLs on their property and information from forest professionals. Prerequisite: NREM 101, 211, and 221 or permission of instructor or department chairperson.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	405	Integrated Resource Management	X		Systems perspective on holistic or integrated planning and management of natural resources. Stresses data analysis and its role in the decision-making process. Prerequisite: NREM 101 or equivalent; all core courses in natural resources and environmental management (or concurrent enrollment); junior or senior standing.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	490	Community Engagement in NREM	X		Professional experience with a client whose needs are matched by the NREM faculty. Each experience is unique and determined by the nature of the client-professor relationship. Prerequisite: NREM 101 or equivalent; junior or senior standing. A total of 6 credits may be earned, but no more than 3 in any one semester or term.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	491	Environmental Readings	X		Individual or small-group discussions relevant to natural resources or environmental studies/sciences/management. Prerequisite: NREM 101 or equivalent. A total of 3 credits may be earned.	Sciences and Humanities	Environ Geol Nat Res	UG
NREM	501	Forest Plan	X		Introduces students to the social, economic, and ecological forces that shape U.S. private forests. Takes an in-depth look at forest landowner values, attitudes, and perceptions of forests and linkages to management decision-making strategies and behaviors. Also introduces students to the skills they will need to interact with private forest landowners (PFLs) and forest management professionals. Students will develop forest stewardship plans based on interactions with PFLs on their property and information from forest professionals.	Sciences and Humanities	Environ Geol Nat Res	GR
NREM	504	Sustainable Agriculture		X	Natural resource use in agricultural systems with emphasis on principles of sustainability. Includes integrated pest management, permaculture, and other production practices that conserve soil, water, and biological resources. Field trips included. Not open to students who have credit in NREM 304.	Sciences and Humanities	Environ Geol Nat Res	GR
NREM	507	Env Mgt Developing Countries	X		Survey of challenges facing management of urban environments and the rural-urban interface in the developing nations of Asia, Africa, Latin America, and Pacific Oceania. Features interdisciplinary approach with frequent guest speakers to discuss existing and potential management, economic, technical, and policy solutions in their regional, cultural, and historical contexts. Not open to students who have credit in NREM 307.	Sciences and Humanities	Environ Geol Nat Res	GR

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
NREM	509	Human Dimensions Global Change	X		Systematic exploration of major topics of human and environmental change from local to global scales, including population, energy, agriculture, industry, technology, urbanization, water, climate, natural hazards, socio-economic systems, land use, trade, marginalized societies, and biodiversity. Not open to students who have credit in NREM 309.	Sciences and Humanities	Environ Geol Nat Res	GR
NREM	531	Energy and Mineral Resources	X		Appraisal of the problems, prospects, and societal and technical issues surrounding the use of energy and mineral resources. Emphasizes environmental problems and ecoenergetics, consideration of the natural resource base, distribution and production problems, conservation, alternative energy systems, resource policy, and research. Not open to students who have credit in NREM 331.	Sciences and Humanities	Environ Geol Nat Res	GR
NREM	535	Renewable Energy Sustain Tech		X	Exploration of alternative/renewable energy systems (wind, solar, hydro, biomass, geothermal, fuel cells). Case studies of sustainable technology emphasize topics including industrial ecology (life-cycle analysis, design for the environment, clean manufacturing, and impact assessment) and appropriate technology applications in developing countries. Problem- solving applications using various approaches. Not open to students who have credit in NREM 335.	Sciences and Humanities	Environ Geol Nat Res	GR
NREM	557	Internat Community Development	X		Application of practical methods to problems of development in poor rural agrarian communities and environmental management in poor urban communities in Asia, Africa, and Latin America. Emphasizes face-to-face methodologies to the identification and development of workable solutions to resource and environmental problems of disadvantaged populations in developing nations. Not open to students who have credit in NREM 357.	Sciences and Humanities	Environ Geol Nat Res	GR
NREM	592	Environmental Interpretation	X		Develops skills and techniques necessary to the interpretation of ecological and environmental characteristics of earth systems. Emphasizes field work and creative presentation of concepts, and organization and management of interpretive programs including sites and facilities. Not open to students who have credit in NREM 392.	Sciences and Humanities	Environ Geol Nat Res	GR
NREM	595	Teaching Environmental Ed	X		Opportunities for enriching instruction through environmental education in formal and nonformal educational settings. Studies conservation, outdoor and environmental education, including teaching techniques and instructional resources used in each. Not open to students who have credit in NREM 395.	Sciences and Humanities	Environ Geol Nat Res	GR
NREM	652	Air, Water and Soil Pollution	X		Chemical and biological processes related to environmental pollution, with emphasis on causes, pathways and risks to public health and the environment. Conventional and innovative technologies for remediation of contaminated air, water and soil. Some environmental chemistry. Open only to graduate students.	Sciences and Humanities	Environ Geol Nat Res	GR
NREM	697	Advanced Topics in Env NR Mgt	X		Advanced special topics course in environmental and natural resources management. Prerequisite: permission of the department chairperson. A total of 6 credits may be earned, but no more than 3 in any one semester or term.	Sciences and Humanities	Environ Geol Nat Res	GR

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NUTR	456	Community Nutrition	X		Overview of community nutrition and nutrition education. Analysis of biological, economic, social, cultural, and policy issue affecting a community's nutritional status. Emphasis on federal food and nutrition programs and policy implications at the state and local level. Observation and participation in local nutrition programs. Prerequisite: NUTR 455.	College of Health	Nutrition and Health Science	UG
NUTR	480	Global Nutrition	X		This course explores 21st century global nutritional issues including both over and under nutrition, food insecurity, religious dietary prohibitions and national and international food system paradigms. Food and nutrition policies that shape population and individual dietary consumption patterns both nationally and globally are researched and debated for immediate and downstream impacts. Prerequisite or parallel: NUTR 340.	College of Health	Nutrition and Health Science	UG
PHIL	230	Environmental Ethics	X		Introduction to and analysis of basic concepts, principles, theories, and issues in environmental ethics.	Sciences and Humanities	Philosophy/Religious Studies	UG
PLAN	101	Introduction to Planning	X		Introduces students to the planning skills needed to help influence the direction and growth of communities and to help neighborhoods, cities, and rural areas strike a balance between development, the provision of essential services, and environmental protection. Offered on-line only to high school students. Not open to students who have credit in PLAN 100.	Architecture and Planning	Urban Planning	UG
PLAN	303	Economic Development Studio	X		Methods of analyzing local economic condition and performance, both qualitative and quantitative. Three local economies are examined: neighborhood, municipal, and region. Formulation of an economic development plan involving all three interacting economies and a set of policies to improve their performance. One or more sites and land uses are selected strategically toward plan implementation, and are analyzed as to their legal, market, financial and operational feasibility. The plan is mentored by, and presented to, external jurors in the field. Required for BUPD major and RED minor. Prerequisite: PLAN 203; waived for minors in Real Estate Development upon permission of the instructor or department.	Architecture and Planning	Urban Planning	UG
PLAN	404	Urban Design	X		An exploration of the physical form of the public realm and how it has been shaped by social, economic, political, and cultural forces. Special attention will be paid to issues of identity, sense of place, placemaking, and sense of belonging.	Architecture and Planning	Urban Planning	UG
PLAN	421	Urban Land-use Planning	X		Principles of urban land-use planning for newly developing areas and for changing older communities. Attention to environmental, efficiency, and aesthetic concerns in urban growth. Preparation of the comprehensive urban land-use plan.	Architecture and Planning	Urban Planning	UG
PLAN	425	Urban Ag as Comm Dev	X		Examines the growing role of urban agriculture in cities and the implications for community development and design. Examines the broad issues of food production and distribution along with related policies. Focuses on the present discourse associated with food security. Sustainability provides a framework under which communities better use natural resources, create infrastructures that are more efficient, protect and enhance quality of life, and create new, greener businesses that strengthen their economies without compromising the environment.	Architecture and Planning	Urban Planning	UG
PLAN	428	Urban Impact Analysis	X		Techniques for estimating the environmental, socioeconomic, fiscal, and energy effects of proposed plans and development projects.	Architecture and Planning	Urban Planning	UG

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PLAN	433	Environmental Planning	X		Introduction to the fundamental issues and technologies associated with planning for sensitive use of environmental resources. Topics include waste management, air and water quality planning, ecological systems, and methods of environmental analysis and implementation.	Architecture and Planning	Urban Planning	UG
PLAN	439	Community Facilities Planning	X		Design principles and economic conditions in planning for urban physical facilities, including recreation facilities, streets, sidewalks, drainage, water supply systems, sewerage, waste treatment, and others.	Architecture and Planning	Urban Planning	UG
PLAN	441	Sustainable Housing		X	A survey of sustainable housing typologies, with an emphasis on their design and integration into existing planning law frameworks. Includes discussion of energy ranking systems, sustainable material use, and response to local climatic and geologic conditions.	Architecture and Planning	Urban Planning	UG
PLAN	460	Altern Sustainable Comm Plan		X	Seminar course examining nontraditional approaches to community planning and design. Focuses on concepts associated with the design of sustainable communities. Historical precedent, case study, and utopian alternatives are synthesized to project alternative futures for present community planning and design issues.	Architecture and Planning	Urban Planning	UG
PLAN	504	Urban Design	X		An exploration of the physical form of the public realm and how it has been shaped by social, economic, political, and cultural forces. Special attention will be paid to issues of identity, sense of place, placemaking, and sense of belonging.	Architecture and Planning	Urban Planning	GR
PLAN	506	Environmental Design Studio	X		An interdisciplinary approach to the resolution of problems in environmental design. Appropriate projects to be determined in consultation between the students and faculty.	Architecture and Planning	Urban Planning	GR
PLAN	525	Urban Ag as Comm Dev	X		Examines the growing role of urban agriculture in cities and the implications for community development and design. Examines the broad issues of food production and distribution along with related policies. Focuses on the present discourse associated with food security. Sustainability provides a framework under which communities better use natural resources, create infrastructures that are more efficient, protect and enhance quality of life, and create new, greener businesses that strengthen their economies without compromising the environment.	Architecture and Planning	Urban Planning	GR
PLAN	532	Economics of Planning	X		Essential economic perspective on planning issues, such as land use and its impact, urban form, environmental protection, housing, traffic and multi-modal transportation, public goods, public utilities, and choices. Advanced urban economics, including location theory, and development economics; theory and methods of economic development; rationale and forms of market interventions and the basis for structuring public-private partnerships. The course is an intellectual exchange between a market economist and a planner on how to formulate and solve urban problems.	Architecture and Planning	Urban Planning	GR
PLAN	533	Urban Environmental Planning	X		Introduction to urban planning considerations for control and reduction of air, water, and land degradation, including waste management, noise pollution, and other side effects of urban development.	Architecture and Planning	Urban Planning	GR
PLAN	534	Regional Development Planning	X		Seminar in techniques of regional planning analysis and policy formulation. Methods of integration of economic, ecological, and social objectives in regional development.	Architecture and Planning	Urban Planning	GR

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
PLAN	538	Regional Land-use Planning	X		Planning the uses of land at the regional, area, and state levels; interface between social, environmental, and land-use plans at the regional level; and land-use policies for critical-area management including the coastal zone.	Architecture and Planning	Urban Planning	GR
PLAN	541	Sustainable Housing		X	A survey of sustainable housing typologies, with an emphasis on their design and integration into existing planning law frameworks. Includes discussion of energy ranking systems, sustainable material use, and response to local climatic and geological conditions.	Architecture and Planning	Urban Planning	GR
PLAN	560	Altern and Sust Comm Plnng		X	Seminar examining nontraditional approaches to community planning and design. Focuses on concepts associated with the design of sustainable communities. Historical precedent, case study, and utopian alternatives are synthesized to project alternative futures for present community planning and design issues.	Architecture and Planning	Urban Planning	GR
PLAN	637	Impact Analysis	X		Human and environmental impact analysis starts with a foundation of the social indicators of the quality of place, and methods of their measurement, including levels of service; it then explores analytical methods of development impacts, overall and distributive, on both human and non-human settlements: fiscal, economic, multi-modal transportation, environmental. A foundation in the science of ecology, briefly reviewed here and with readings, is beneficial.	Architecture and Planning	Urban Planning	GR
POLS	281	Econ Pol Prob of Emerg Ntns	X		Historical and contemporary problems of the less-developed nations. Conditions contributing to economic, political, and social change. Problems of economic development policies and programs within the institutional structure. Internal and external pressures that influence patters of development. Not open to students who have credit in ECON 279.	Sciences and Humanities	Political Science	UG
POLS	347	Environmental Law and Policy	X		Study of the American political and legal system's response to environmental problems. Politics of environmental policy making, problems of policy implementation, environmental law cases, and trends toward global environmental governance are considered.	Sciences and Humanities	Political Science	UG
POLS	395	Politics of the Global Economy	X		Historical and theoretical introduction to the politics of international trade and payments, including barriers to trade, exchange rates, multinational corporations, financial crisis, international economic institutions, and the problems of economic development.	Sciences and Humanities	Political Science	UG
SOC	328	Global and the Social World	X		Examines the process of globalization especially as it occurs in countries with emerging economies. Social problems, social change models, and ideologies related to globalization are also discussed.	Sciences and Humanities	Sociology	UG
SOC	355	Environment	X		Addresses the role of social structures as cause, impediment, and solution to environmental and sustainability issues.	Sciences and Humanities	Sociology	UG
SUST	250	Intro to Sustainable Dev		X	Presents sustainable development objectives as dependent upon interactions both within and among systems comprising natural, human/social, and economic capital. Examines elements and linkages essential for functioning of these systems. Addresses values that frame decision making for maintaining systems elements and linkages and for setting natural, human/social, and economic sustainable development goals.	University College	University College	UG

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
SUST	320	Sys Thnk for Sust		X	An introduction to the composition and dynamic complexity of natural and human-fabricated systems. Differentiation of systems types, their operations, and use of systems frameworks for modeling future states are addressed. Emphasis on "whole systems" and "life cycle" approaches lead students through progressive exploration of case studies that culminates in a research presentation based on a systematic exploration of a selected human-fabricated system. Open only to students with permission of advisor or instructor.	University College	University College	UG
SUST	330	Measure and Rpt Sust		X	Introduces students to the metrics, indicators, and reporting systems used to characterize and influence organizational practices and performance relative to sustainability goals. Emphasis is placed upon how these sustainability indicators, especially greenhouse gas inventories, are completed, analyzed, and reported. Assignments will provide students with the opportunity to critically analyze data and prepare reports. Prerequisite: SUST 320 or by permission of advisor or instructor. Open only to students with permission of advisor or instructor.	University College	University College	UG
SUST	340	Analytics and Mod for Sust		X	Introduces students to principles of predictive analysis and computer-based modeling tools which assist stakeholders in making informed decisions. Emphasis is on systems thinking, statistical techniques, and the application of systems dynamics theory for quantitatively analyzing and predicting the potential impact of organizational decisions upon sustainability issues, e.g., population, economics, water scarcity, greenhouse gas emissions, climate change, energy, food security, and biodiversity. Prerequisite: SUST 320 and 330 or by permission of advisor or instructor. Open only to students with permission of advisor or instructor.	University College	University College	UG
SUST	400	Creating a Sustainable Future		X	Addresses from a systems perspective multiple limiting factors in the environmental, social, and economic domains that constrain global sustainability and the interactions among these factors. The influence of civilization on these factors and on their interconnections is examined along with potential human interventions for ensuring long-term viability of critical systems. Includes a substantial immersive project component for assessing the sustainability of an existing system and developing recommended interventions for enhancing long-term success of that system.	University College	University College	UG
SUST	510	Atmosphere		X	Introduction to the atmosphere and to processes, through its physical and chemical components, and the interactions among the many additional factors that produce weather and climate, as well as interactions of the atmosphere with the oceans, within the broad social and economic issues which relate to understanding the atmosphere as a system.	University College	University College	GR
SUST	511	Ecological Systems		X	Introduction to the principles and dynamics of ecological systems at the population, community, ecosystem, and biome levels. Study of the effects of physical and biological conditions on the abundance, distribution, and diversity of plants and animals. Emphasis on human impacts on ecosystems and the provision of ecosystem services, and the related issues of conservation, planning, and restoration of ecological systems.	University College	University College	GR

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
SUST	512	Soil Resources		X	Introduction to the principles and dynamics of soil formation and the potentials for damage. Examination of the physical and chemical properties of soils and their role in agricultural production, storm water filtration, and aquifer recharge, and support of biota in the varying biomes of the world.	University College	University College	GR
SUST	513	Material Resources and Waste		X	Introduction to concepts, issues, and practices surrounding the use of material resources and waste streams. Emphasis on reducing the environmental and human health impacts of materials and waste. Study of resource conservation, reuse, and recycling; and solid, liquid, and molecular waste stream reduction. Emphasis on the whole life cycle of materials from cradle to grave, or cradle. Discussion of the Living Product Challenge, Design for Sustainability, and Cradle to Cradle.	University College	University College	GR
SUST	514	Water Resources		X	Introduction to and evaluation of water security issues, including how climate, population, economic growth, technological changes, and other socioeconomic factors affect the water supply and demand imbalances.	University College	University College	GR
SUST	515	Food Systems		X	Introduction to domestic and global food production, supply, and consumption, both historically and projected to future likelihoods. Differentiation of food systems by cultural groups with an emphasis on the full life-cycle of food within a society. How political, sociological, and ecological structures shape consumption will be emphasized. Considerations of human health, environmental impacts, and ethical questions of food are addressed.	University College	University College	GR
SUST	516	Energy Resources		X	Introduction to the sourcing, distribution, and use of energy. Examination of conventional fossil-fuel systems and more contemporary alternative energy and green power sourcing, distribution, and use. Comparative study of distributed energy networks against centralized systems.	University College	University College	GR
SUST	519	Environmental Law		X	Critical investigation of the American political and legal system in shaping possible responses to issues of environmental sustainability. Topics may include: the foundations of environmental law, the process of environmental law-making and implementation; the role of the courts; and specific controversies regarding pollution regulation, energy production, and land use management/planning.	University College	University College	GR
SUST	520	Environmental Ethics		X	Critical examination of central concepts, principles, theories, and issues in environmental ethics. Topics may include: environmental theory, history of ethics, animal rights, population ethics, future generations, climate ethics, the ethics of activism, and corporate responsibility.	University College	University College	GR
SUST	521	Human Health and Well-Being		X	Introduction to concepts, issues, and practices related to individuals living together while maximizing human potential and shared values and minimizing social breakdown and violence. Initially will investigate basic human needs for survival. Exploration will then expand to encompass societal provisions and expectations that lead to human flourishing across the lifespan, such as livability, cultural competence, health and health equity, social support, participatory governance, and human resilience.	University College	University College	GR

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
SUST	523	Population		X	Introduction to historical and recent trends in the fundamental demographic variables affecting human population change (growth or decline) at the global as well as at national and sub-national scales. Emphasis on rate of natural increase, total fertility rates, and life expectancies. Additional investigation of demographic variables as they influence (or are influenced by) human health, epidemiology, culture, technological threats, lifestyles, and health policies/technologies.	University College	University College	GR
SUST	524	Social/Environmental Justice		X	Survey of principles of justice: libertarianism, welfare liberalism, and socialism. Distribution of environmental benefits and burdens across bioregions, populations, and markets, including indigenous rights, environmental racism, food security, and climate change treaties. Evaluation of various models of public participation in environmental decision making.	University College	University College	GR
SUST	525	Int Mat Fin and Sust		X	Introduction to interior material finishes and their environmentally sustainable properties. Emphasis will be on the importance of sourcing appropriate materials and finishes to ensure the health, safety, and welfare of building occupants as well as navigating material resources and verification systems to discern and provide the most socially, environmentally, and economically viable sustainable products for sustainable interiors.	University College	University College	GR
SUST	528	Waste/Human Health		X	Introduction to concepts and issues that guide human practices influencing material consumption patterns as they generate resource depletion and waste/pollution, and impact upon human health conditions. Emphasis on reducing material flow-through in society, addressing best practices for treating waste/pollution, and reducing the conditions that negatively influence human health by our practices of material consumption and waste generation.	University College	University College	GR
SUST	529	Business Ethics/Environment		X	Survey of fundamental principles of business plans and models for achieving operational sustainability. Topics may include: ethical materials sourcing, industrial ecology principles, "cradle-to-cradle" production models, justice in human resources practices, and corporate green washing.	University College	University College	GR
SUST	530	Analytics for Business		X	Introduction to internationally-sanctioned protocols for analyzing the social, economic, and environmental impact of business practice. Includes the analysis of human resource management, supply chain networking and logistics, and the economic benefits/trade-offs of localized sourcing of feed stocks, components and assemblies, and whole system service delivery.	University College	University College	GR
SUST	531	Modeling for Business		X	Introduction to internationally-sanctioned protocols for documenting the social, economic, and environmental impact of business practice. Includes the study of human resource management, supply chain networking and logistics, and the economic benefits/trade-offs of localized sourcing of feed stocks, components and assemblies, and whole system service delivery.	University College	University College	GR

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Subject	Course Number	Title	Includes Sustainability	Sustainability Focused	Course Description	COLLEGE	DEPT	Level
SUST	532	Reporting for Business		X	Introduction to internationally-sanctioned protocols for reporting the social, economic, and environmental impact of business practice. Includes the reporting of human resource management, supply chain networking and logistics, and the economic benefits/trade-offs of localized sourcing of feed stocks, components and assemblies, and whole system service delivery.	University College	University College	GR
SUST	535	Internal Communications		X	Introduction to principles of internal communications.	University College	University College	GR
SUST	536	Ecological Economics		X	Evaluation of environmental goods and services include raw materials, watershed functioning, nitrogen cycling, and carbon sink capacities. Principles for translating the valuation of environmental goods and services into the market terms of sustainability, including market distortions and discounting.	University College	University College	GR
SUST	537	Media Relations		X	Introduction to how journalists do their jobs; what the needs and the strengths and weaknesses are of different news media platforms, e.g., broadcast, print, online, social media; how to prepare for an interview with a journalist and the tools best used to communicate stories to the news media.	University College	University College	GR
SUST	550	Survey of Sustainability Princ		X	This 3-credit course provides a wide-ranging survey of literature in the field of whole systems thinking and the principles and foundations of social, economic, and environmental sustainability in corporate, governmental, and public enterprise. Extensive review of topical literature and accepted models for projection of future developments and impacts from the adoption of best practices in corporate, governmental, and public enterprise are examined.	University College	University College	GR
SUST	600	App of Sustainability Princ		X	Provides opportunity for students to define targets of opportunity and select a case study engagement for the application of the principles of sustainability in social, environmental, and economic contexts. Students are encouraged to shape a game plan for implementation suitable to their current work environment, their community setting, and/or personal enterprise.	University College	University College	GR
TDPT	495	Green Prototyp Upcycl	X		Students use recycling, 3D printing, and lasers to design environmentally sustainable products. Not open to students who have credit in TDPT 595.	Teachers College	Educational Studies	UG
TDPT	595	Res Green Prototyp Upcycl	X		Students take a research-based approach to designing and creating prototypes that promote environmental sustainability using laser machining and 3D printing. Not open to students who have credit in TDPT 495.	Teachers College	Educational Studies	GR
UD	501	UD Studio 1: Sust Urban Syst		X	Studio/project-based introduction, fostering the understanding of methods and systems analysis and development that lead to the design of sustainable urban settlements. The interplay of context, culture, design, and performance are highlighted through complex urban design projects. Prerequisite: permission of the MUD program coordinator. A total of 4 credits may be earned, but no more than 2 in any one semester or term. Open only to College of Architecture and Planning students.	Architecture and Planning	Landscape Architecture	GR

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UD	503	UD Studio 3: Comm-Bsd Sust Des		X	Explores the interpretive dimensions of community, politics, and culture. Encourages critical thinking and studies the relationship of ethics, politics, and development. Sustainability, equity, and justice in urban design will be examined through context-rich community-based projects. Prerequisite: permission of the MUD program coordinator. A total of 4 credits may be earned, but no more than 2 in any one semester or term. Open only to College of Architecture and Planning students.	Architecture and Planning	Landscape Architecture	GR
ZOOL	682	Animal Ecology	X		The composition, development, dynamics, and geographic distribution of animal communities. The relationships between animals and the physical, chemical, and biotic elements of the environment. Includes physiological ecology and ethology. Field studies of animal communities.	Sciences and Humanities	Biology	GR