

Course Number	Course Name	Department/ Program	Course Description	Sustainability Course or Course Includes Sustainability
AAS 460	Black Women in US History	African American Studies	Examines the history of black women in the United States from the slave era through the reform movements that occurred after World War II. Focuses on the range of demands placed on black women during the Gilded and Progressive eras - the founding of the National Association of Colored Women in 1896, their participation in the women's suffrage movement, black struggles for liberation in the United States and in the African Diaspora, cultural movement, war, labor force participation, and health. Also explores black women's interaction with male-dominated groups and feminists from other racial and ethnic groups. Students will analyze black women as leaders, their leadership styles and the impact that they have made on constituents.	Includes Sustainability
AAS 261	African American History	African American Studies	Surveys the history of African Americans from African origins to the present. The course focuses on the often overlooked but crucial role of African Americans in shaping US and world history. Topics include: West African civilizations, the slave trade and slavery, abolitionism and the Underground Railroad, Emancipation, post-slavery migrations and labor systems, the rise of Jim Crow, the Harlem Renaissance, the Civil Rights Movement and Black Power.	Includes Sustainability
AAS 312	Gender Issues Cont Africa	African American Studies	gender inequalities in democratic participation and socioeconomic development. It further interrogates burning issues of human rights and the rights of the girl child as they pertain to social practices such as female mutilation and child soldiers. It analyzes also the changing dynamics of households due to the combined effects of transnational migration, HIV/Aids and conflicts and their gender implications. It revisits opportunities for social change in the face of an increased pressure from globalization, environmental degradation, a growing retrenchment of the state, and many threats to human security.	Includes Sustainability
AMS 100	Indian Image On Film	American Studies	Discusses the fabricated image of Native Americans in American film history, the media process that perpetuates such images, and the resulting stereotypes; also covers the relationship to social movements and alternatives for overcoming stereotypes.	Includes Sustainability
AMS 114	American Lives and Environments: Folklore and Social Groups	American Studies	Examines patterned stories, sayings, designs, and ways of living that have been created and are continuously being recreated by groups of people; also investigates historical and social meanings of folklore.	Includes Sustainability
AMS 107	Intro American Studies	American Studies	Introduces students to a variety of approaches that have been developed in American studies to assist understandings of how different people participate in this society and in the world. Also considers how experiences continue to shape present thinking and future possibilities.	Includes Sustainability
AMS 179	Introduction to Native American History	American Studies	Introduces the lives, histories, cultures, and characters of Native American peoples of North America. Focuses on cultural assumptions and native visions of the land, the environment, and the spirit life.	Includes Sustainability
AMS 145	Cities of the World	American Studies	This course gives students an introduction to urban studies that is historical, transnational and multidisciplinary. Starting with basic concepts such as "what is a city in today's world?" it addresses some of the main analytical debates of the field today, including massive urban growth, urban inequality and segregation, the politics of urban space, suburban sprawl, ghettos, slums, and the explosion of informal settlements, gentrification, urban circulation systems, global cities and urban networks, and the promise and perils of cities for humans' relationship to the environment.	Includes Sustainability
AMS 301	Introduction to Native American Women	American Studies	Traces historical periods that affected Indigenous women's lives; emphasizes current laws and policies that have impacted their families and communities. SEM	Includes Sustainability
APY 246	Introduction to Primate Behavior	Anthropology	Behavior, and social organization of non-human primates: current theories, evolutionary processes, and research methods, both in the field and in the laboratories.	Includes Sustainability
APY 367	Meso-American Archaeology	Anthropology	Examines art, iconography, architectures, and archaeology of ancient Mexico, Guatemala, and Belize; also covers religious, political, and economic development from its beginning, around 2000 B.C.E., to its decapitation by the Spaniards in 1521.	Includes Sustainability
APY 107	Introduction to Physical Anthropology	Anthropology	For centuries preceding modern times, our uniqueness as a species was taken as a sign of special creation; we were not seen to be a part of nature. But as knowledge of human evolution, our closeness to other primates, and our adaptations to specific environments emerged, we have taken our place in the animal kingdom. Here, we learn how those insights developed, and about current methods of understanding human origins and the natural forces that have shaped us.	Includes Sustainability

*courses in orange font are graduate level courses. In some cases, course descriptions were not available. Please see UB's course catalogue for more information: <http://undergrad-catalog.buffalo.edu/index.shtml>

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APY 414	Museum Management	Anthropology	the past and present. The care of artifacts cannot stop at identification, physical conservation and exhibition. Research about museum and collection objects must be seen as part of a larger task: an exploration of the social and cultural significance of objects in relation to each other and to the people who made, used, and kept them as well as who collected them. Conservation must include preservation of the information accompanying an object, information beyond provenance, or artifact type. Finally, curatorial research entails a critical awareness of our own culturally-bound responses to artifacts. This course prepares	Includes Sustainability
APY 448	Hum Genetics-Legal Eth	Anthropology	Recent advances in genetic technology have presented the scientific and lay community with ethical and legal problems, yet to be resolved. The objective of this course is to provide an opportunity for informed discussions of such issues relating to contemporary human/medical issues.	Includes Sustainability
APY 411	Four Horsemen of the Apocalypse	Anthropology	Studies the four horsemen in all their guises. Examines their importance historically and at present. They have been and are religious icons, symbols of the major processes of warfare, disease, famine, and death, as well as cultural, literary, and artistic symbols throughout the generations. The course traces one of the horsemen through both time and space in the intellectual area of the students' choice.	Includes Sustainability
APY 106	Intro:Cultural Anthropology	Anthropology	Surveys important ideas about culture and society that have shaped cultural anthropology. Studies the principal institutions of culture - language, social organization, religion, economics, politics, artistic expression, etc. - in their traditional ethnographic context and as they change through cultural contact and modernization.	Includes Sustainability
APY 382	Indians of South America	Anthropology	Surveys the indigenous societies of cultures and South America, including both highland Andean and lowland Amazonian people. Provides a perspective on the prehistory, history, and contemporary situation of native South Americans, examining traditional anthropological topics as well as current political issues surrounding indigenous rights, integration into national societies, and environmental destruction.	Includes Sustainability
APY 105	Introduction to Anthropology	Anthropology	behavior and lifestyles across the world and throughout time. This course will take a look at our four major subfields - archaeology, linguistic anthropology, physical anthropology, and cultural anthropology - and include discussions on our "youngest" subfield, applied anthropology. The goal of this class is to understand the wide range of issues covered by the fields of anthropology, the ways in which these issues are studied by specialists in the field, and the practical effects of the questions covered by anthropological study. In order to survey such a wide range of issues, the class is structured in a standard lecture	Includes Sustainability
APY 447	Mythology of the Americas	Anthropology	This class includes the environmental aspects of sustainability	Includes Sustainability
ARC 475	Environmental Controls: Acoustics & Lighting	Architecture	Acoustics and lighting impact on building design, including form, structure, and material. Qualitative and quantitative issues in the lighting of space, integration of natural and artificial light, fundamental nature of sound transmission and absorption, and principles of design for an effective acoustic environment.	Sustainability Course
ARC 473	Environmental Controls: Thermal Environmental Systems	Architecture	examines the systems of climate control buildings and their relation to energy management, passive ventilation and selection of mechanical equipment systems, cost implications, and effectiveness. Investigates design considerations of integrating various building systems, including: mechanical, electrical, and plumbing systems; heating, ventilation, and air-conditioning (HVAC) equipment; water; and waste water systems. Introduces sanitation, fire protection, and vertical transportation systems. Considers techniques for solar heating, passive cooling, indoor air quality, and human health. Students must have completed ARC 241 and possess basic graphic skills, model making skills, and access to the Architecture Shop as pre-requisites for enrollment.	Sustainability Course
ARC 479	Sustainable Design	Architecture	Offers a working understanding of the issues inherent in the discourse of sustainability as it occurs in planning and design professions. Students explore the practical and theoretical relationships among urban form, democratic ideals, and ecological imaginations. May be offered on an intermittent basis.	Sustainability Course
ARC 575	Environmental Controls: Acoustics & Lighting	Architecture	Acoustics and lighting impact on building design, including form, structure, and material. Qualitative and quantitative issues in the lighting of space, integration of natural and artificial light, fundamental nature of sound transmission and absorption, and principles of design for an effective acoustic environment.	Includes Sustainability
ARC 211	American Diversity and Design	Architecture	experiences within the United States and their attendant design issues. Specifically, the course concentrates on the ways in which our physical and media environments affect various populations in the U.S. and, in turn, the ways these populations have affected our designed environments. It introduces students to eight issues of U.S. diversity: race, ethnicity, gender, class, age, physical ability, cognitive ability, and religion. Writings, films, products, graphics, electronic media, buildings, and physical environments by and about diverse U.S. individuals and groups are examined. The U.S. history of our diverse physical and	Includes Sustainability
ARC 573	Environmental Controls: Thermal Environmental Systems	Architecture	systems, cost implications, and effectiveness. Investigates design considerations of integrating various building systems, including: mechanical, electrical, and plumbing systems; heating, ventilation, and air-conditioning (HVAC) equipment; water; and waste water systems. Introduces sanitation, fire protection, and vertical transportation systems. Considers techniques for solar heating, passive cooling, indoor air quality, and human health. Students must have completed ARC 241 and possess basic graphic skills, model making skills, and access to the Architecture Shop as pre-requisites for enrollment.	Includes Sustainability

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ARC 314	Design & Environments	Architecture	Explores perspectives on the physical environment and design, focusing on relationships between people, the natural and constructed environments, and landscapes. Introduces new ways of seeing, understanding, and communicating landscape design. Considers problems in landscape design including greenspace, complex urban centers, post-industrial wastelands, physical infrastructure, and entire watersheds. Reviews how the planning and development of our landscaped settings affects quality of life in physical environments within the context of environmental design. May be offered on an intermittent basis. Open to all undergraduate majors.	Includes Sustainability
ARC 412	CAAD 2: Models, Objects, & Environment	Architecture	Introduces students to techniques for generating formal organizations through computational means and representing movement in architecture. Course assignments will develop a range of skills including: Parametric modeling through Grasshopper/Rhinoscript; Processing/other intro programming platform; animation; 2D/3D/4D diagramming methods. Digital media skills introduced will be coordinated with course material from ARC 302: Architecture Design Studio 6.	Includes Sustainability
ARC 231	Architecture History: Ancient - 1450	Architecture	Introduces the development of urban and architectural form in a cultural context from the first settlements of Neolithic times to the consolidation of architecture as a discipline in the 1450s.	Includes Sustainability
ARC 234	Architecture History: 1450 - Present	Architecture	Introduces the fundamentals of architectural design from the theory and practice of the 1450's to the built and written manifestos of modern times. Situates the evolution of the architectural discipline within the context of social, cognitive and technological transformation.	Includes Sustainability
ARC 534	Arch Hist 2:1450-Pres	Architecture	Introduces the fundamentals of architectural design from the theory and practice of the 1450's to the built and written manifestos of modern times. Situates the evolution of the architectural discipline within the context of social, cognitive and technological transformation.	Includes Sustainability
ARC 352	Structures I	Architecture	Introduces the fundamentals of statics and strength of materials. Provides a theoretical and scientific basis for understanding how various structural systems and structural materials work and withstand loading. Investigates the concepts introduced during the course with qualitative methods, as well as quantitative analysis. The course's scope is limited to examining simple structural elements, such as trusses, beams, and columns.	Includes Sustainability
ARC 121	Introduction to Architecture	Architecture	cultures and traditions. Course material is presented in a lecture format, utilizing multiple media. Course topics include historical examples of architecture, using past and present buildings, landscapes, and urbanism as a tool for developing an understanding and appreciation of the architecture discipline and its design objectives. Course material is drawn from numerous fields including architectural history and theory, the arts and letters, design studies, philosophy, literature, and urban studies, all supporting Louis Kahn's claim that architecture is the handwriting of humanity. Fulfills the SUNY Arts general education	Includes Sustainability
ARC 362	Architectural Theory	Architecture	Overview of architectural theory and approaches. Examines architectural theory as applied to building design, using architectural theory as a basis for developing design paradigms. Introduces research methods used in architectural theory.	Includes Sustainability
ARC 241	Introduction to Building Technology	Architecture	Overview on interrelationship of environment and building, specifically examining site design, structure/tectonics, and environmental systems, as they relate to building design.	Includes Sustainability
ARC 435	American Architecture and Urbanism	Architecture	Topics vary annually. An introduction to the history of American architecture with emphasis on American urbanism. Historical and contemporary review for exploring the underpinnings of architecture and American urbanism in past, present, and future situations. Past topics have included American architecture and urbanism from pre-colonial to 1870 as well as American architecture and urbanism from 1870 to post-modernism. As topics vary annually, pre-requisites will vary contingent upon semester topic.	Includes Sustainability
ARC 318	Design Methods	Architecture	Topics vary annually. Past topics addressed issues in architecture, design, sketching, and graphic production, using drawing and making as a mode of seeing and thinking. May be offered on an intermittent basis. As topics vary annually, pre-requisites will vary contingent upon semester topic.	Includes Sustainability
ARC 343	Building Systems Technology I	Architecture	Topics vary annually. Past topics detailed studies of design/build and existing systems available to meet needs of the built environment. Studied future possibilities of systems that meet the demands of a rapidly changing environment. Surveyed historical evolution of building systems, while emphasizing methodology of development and implementation. May be offered on an intermittent basis.	Includes Sustainability
ARC 448	Building Projects	Architecture	Topics vary annually. Past topics examined design/build projects as a complex system of enterprises producing built facilities and altering environments. Included field trips, hands-on steel fabrication and erection, concrete demolition, concrete pours, pattern making, painting, landscaping, stone setting, as well as shop drawings. May be offered on an intermittent basis.	Includes Sustainability

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ARC 566	Urban Design: Built Environment Case Studies	Architecture	what does it mean? What are the relations between density and sustainability? This graduate seminar is intended to examine density as a most profound indicator of human settlement pattern especially in urbanized areas. One of hypotheses that the class addresses is this: Is denser the city, the greener it is or is it? Through the use of provocative readings and comparative analysis and mapping techniques, we compare major cities around the world to understand the relation between urban density and urbanism, its economic and environmental robustness: placemaking, good urban form and great streets -- all	Includes Sustainability
AS 229	Contemp Asian Societies	Asian Studies	Introduces students to major features of societies in East, Southeast, and South Asia, and may incorporate material on Central and Southwest Asia depending on the instructor. Discusses the ways in which social scientists analyze contemporary societies and survey theories developed by social scientists to explain social phenomena in contemporary Asian societies.	Includes Sustainability
BIO 203	General Physiology	Biological Sciences	Covers general physiology principles, using cells, plants, and animals as models to illustrate mechanisms by which living organisms maintain internal function and adapt to their external environment. Replaces BIO 328.	Includes Sustainability
BIO 200	Evolutionary Biology	Biological Sciences	Evidence for evolution; principle of genetics; population genetics; selection (natural, sexual, and kin); evolution of major groups of organisms; speciation; adaptation; coevolution; and sociobiology. This course is a controlled enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may repeat the course in the summer or winter; or only in the fall or spring semester with a petition to the College of Arts and Sciences Deans' Office.	Includes Sustainability
BIO 332	Advanced Molecular Biology Laboratory	Biological Sciences	Hands-on experience with cellular and molecular techniques used in today's research environment. These techniques include the polymerase chain reaction (PCR), agarose and polyacrylamide gel electrophoresis, immunoblotting, and recombinant protein purification.	Includes Sustainability
BIO 309	Ecology	Biological Sciences	Processes that control the abundance and distribution of organisms in their natural environments; emphasizing population, community and evolutionary ecology.	Includes Sustainability
BIO 318	Plant Biology	Biological Sciences	This course focuses on land plants and algae. Topics include photosynthesis, water relations, plant nutrition, reproduction, development, ecology, economic botany, and others, depending on student interest. Topics will be covered from molecular to organismal levels.	Includes Sustainability
CE 419	Alternative Fuels	Chemical Engineering	technology, economics, and other aspects of converting crude oil into gasoline. Considers other fuels including ethanol and biodiesel, hydrogen, synthetic gasoline from coal or shale oil, and a few other, less likely possibilities. Understanding the chemical processing and technology involved will be a major objective, but the course will also stress the importance of making equitable comparisons between the technologies. In addition to technological issues, the alternative fuel technologies will be assessed with respect to environmental impact, economics, and economic impact, sustainability/renewability,	Sustainability Course
CE 408	Chemical Engineering Plant Design	Chemical Engineering	Applies chemical engineering principles to the design of chemical plants and process equipment. Preliminary economic evaluations of plants. Process flow sheet development; material and energy balances; equipment specification, fundamentals of engineering economics and profitability analysis; strategies in process design and synthesis.	Includes Sustainability
CE 404	Chemical Engineering Prod Design	Chemical Engineering	Integrates the general framework for product design and development with molecular structure-property relations, enables students to evaluate the design of existing products and participate in the design of improved and new products.	Includes Sustainability
CE 407	Separations	Chemical Engineering	Staged operations of distillation, absorption, leaching, and extraction. Phase equilibria and application of equilibrium data to calculational methods provide knowledge of solution methods and limitations for binary and multicomponent systems.	Includes Sustainability
CE 341	Applied Mathematics for Chemical Engineers	Chemical Engineering	engineering applications. An emphasis is placed on the implementation of the numerical methods in a programming environment and computer based modeling of chemical engineering applications. Topics include the solution of linear and nonlinear algebraic equations, eigenvalue problems. application of finite difference methods, interpolation, differentiation and integration, solution of systems of ordinary differential equations, boundary value problems, partial differential equations, and linear and nonlinear regression analysis. These methods are demonstrated via problems encountered in chemical	Includes Sustainability
CE 447	Sustainability	Civil Engineering	Engineering policy dimensions of sustainability. Topics include: (1) definitions and concepts of "sustainability," (2) introduction to climate change science and policy, and (3) relevant analytical tools such as life cycle assessment and carbon footprint analysis. Student teams will conduct studies that integrate environmental, economic, and social concerns in an engineering context, with a strong emphasis on oral and written communications.	Sustainability Course

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CIE 340	Environmental Engineering	Civil Engineering	Introduces environmental engineering systems and infrastructure. Covers fundamentals including the application of mass and energy balances and equilibrium chemistry to environmental systems. Applies these concepts to a number of important environmental topics including risk assessment, modeling of water quality systems, water and wastewater treatment facilities, air quality modeling, and municipal and hazardous solid waste management.	Sustainability Course
CIE 343	Hydraulic Engineering	Civil Engineering	Application of fundamentals of fluid mechanics to design systems, including pipe/pump systems, analysis of flow in rivers, and hydrodynamic and aerodynamic forces on structures. Topics include friction losses in pipes, flow measurement, hydraulic machinery, boundary layer characteristics, drag and lift forces, energy and momentum principle in open channel, resistance in open channels, uniform flow, nonuniform flow, surface profile computation, and design of channel controls and transitions.	Includes Sustainability
CIE 341	Environmental Engineering Science	Civil Engineering	CIE 341 covers basic concepts of microbiology and chemistry and their links to applications in environmental engineering, including, but not limited to, water and wastewater treatment, hazardous waste management, and ecology. Content is closely coordinated with CIE 340 Environmental Engineering, taught in fall semester of the sophomore year, which serves as the introduction to CIE 341.	Includes Sustainability
CIE 449	Environmental Engineering Design	Civil Engineering	Design of environmental engineering systems, such as water-distribution networks; storm and wastewater collection systems; treatment systems for air, water, and wastewater; and hazardous waste site remediation. This is a professional practice-oriented course and includes process engineering principles, system analysis and design, regulations, economics, guest lectures, and field trips. Students work in design teams and produce written and oral reports for a major design project.	Includes Sustainability
CIE 415	Prof Practice Issues	Civil Engineering	Ethical issues in civil engineering practice, the professional licensure process, the project life cycle, engineering economics fundamentals, construction contracts and delivery methods, cost estimating fundamentals, project scheduling fundamentals, project control fundamentals.	Includes Sustainability
CIE 441	Ecological Engineering	Civil Engineering	Focuses on the physical, chemical, and hydrodynamic processes governing pollutant fate in natural systems. Topics include mass and energy balances, mixing processes, partitioning processes (exchange with solids and air), and particle removal. Examples from natural systems address lake, river, and atmospheric pollution.	Includes Sustainability
CIE 445	Groundwater Engineering	Civil Engineering	Fundamentals of fluid flow and mass transport in porous media. Derives the governing mass and energy balance equations and develops several commonly applied solutions. Particular topics include groundwater flow under saturated and unsaturated conditions, well hydraulics, introduction to multiphase flow, fundamentals of solute transport, geostatistics, and remediation of contaminated aquifers.	Includes Sustainability
CIE 303	Geodesy, Gps and GIS	Civil Engineering	the expression of these concepts in graphical language, which is central to civil and architectural communication by first developing some basic skills in CAD. Studies concepts and principles of location and layout of points on the surface of the 3-D earth from both a historical and a modern technology perspective. Also covers the problem of converting the curved surface of the earth onto a plane map or computer screen. Reviews the use of plane concepts for local layouts, along with the circumstances under which 2-D plane concepts can be utilized. Discusses and demonstrates the technological basis for modern	Includes Sustainability
CIE 362	Civil Engineering Laboratory II	Civil Engineering	Laboratory testing to enhance and extend the student's understanding of the fundamental principles of soil mechanics, hydraulic engineering, and environmental engineering. Continuation of CIE 361. One 3-hour lab per week or equivalent.	Includes Sustainability
CIE 442	Treatment Process Engineering	Civil Engineering	Overview of environmental engineering treatment systems analysis and design. Topics include water distribution, water treatment, wastewater collection, wastewater treatment, sludge processing, and industrial waste management.	Includes Sustainability
CIE 448	Chemical Principles in Environmental Engineering	Civil Engineering	Presents fundamentals in aquatic chemistry as applied to natural waters, water treatment, and wastewater treatment. Topics include equilibrium concepts, chemical thermodynamics, acid-base reactions, precipitation and dissolution, oxidation and reduction, carbonate system chemistry, and complexation.	Includes Sustainability
CIE 354	Fluid Mechanics	Civil Engineering	Provides an introductory treatment of the dynamics of fluids, emphasizing incompressible fluids. Develops and applies hydrostatics, thermodynamics, fluid characteristics, kinematics, and dynamics; methods of analysis including the infinitesimal and finite control volume; stress rate-of-strain relations; and basic equations for continuity, energy, motion, and force-momentum. Measurement methods.	Includes Sustainability
CIE 444	Hydrologic Engineering	Civil Engineering	Studies the physical processes associated with the components of the hydrologic cycle. Discusses measurement and collection of data. Explores model conceptualization and data analysis for quantification of water flow for design purposes. Emphasizes analysis procedures for surface and ground water hydrology useful for design of urban facilities. Discusses and applies hydrologic design methods to engineering projects. Emphasizes watershed management concepts.	Includes Sustainability

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CIE 440	Travel Demand Forecasting	Civil Engineering	transportation planning effort. The first part of the class will focus on the four-step travel demand forecasting process that consists of the trip generation, trip distribution, mode split and traffic assignment steps. This approach, though aggregate and conventional, has been widely used for planning purposes in the US and other countries in the world. Recent refinements to the process will also be discussed, along with a brief introduction to activity-based analysis, an alternative paradigm of travel demand forecasting that is behavior oriented and tends to increase the sensitivity of transportation planning models to policy	Includes Sustainability
CIE 436	Traffic Operations & Desig	Civil Engineering	This course addresses the design, operation, control and management of transportation facilities. Topics covered include geometric design of roadways, capacity analysis for freeway segments, signal timing and design, and intersection design and layout. Students will be introduced to a number of traffic analysis and traffic simulation software, including the TRANSIMS model and SYNCHRO/SimTraffic. As a part of this course, students will be required to undertake a comprehensive term project that would involve detailed analysis and/or simulation of a given transportation facility.	Includes Sustainability
CIE 469	Hazardous Waste Management	Civil Engineering	of Hazardous and Solid Waste Management are addressed. Topics related to Hazardous Waste include: (1) evolution of current laws dealing with hazardous waste disposal and cleanup; (2) investigation and remediation contaminated sites; and (3) environmental fate and transport of hazardous chemicals. Solid Waste topics include (1) social, economic and political forces that influence the waste management industry; (2) current laws governing solid waste management; and (3) emerging concepts, including Integrated Solid Waste Management, Materials Management, and Life Cycle Analysis. For both focus	Includes Sustainability
CL 423	Religion and Society in Ancient Greece	Classics	Analyzes the role of religion in the ancient Greek polis with attention to the archaeological evidence for cult practice, the representation of ritual acts in Greek literature, gender difference and religious ideology, and the ritual of life cycle.	Includes Sustainability
CL 222	Greek Civilization	Classics	Elements of Greek civilization analyzed from synchronistic and developmental views to produce a coherent image of that culture as a living and expanding entity.	Includes Sustainability
CL 113	Myth and Religion in the Ancient World	Classics	Provides an introduction to the mythology of the Greeks and Romans. In addition to considering the myths themselves, we study how they have been employed by ancient through contemporary cultures as reflected in areas ranging from religious and social practice to works of art and architecture.	Includes Sustainability
CL 223	Roman Civilization	Classics	Survey of Rome's mythical beginnings to the time of the emperors that covers the full spectrum of Roman cultural expression. Topics covered are not only literature, painting, sculpture, and architecture but also details of everyday life in the Roman world, as well as the roles played by marginal figures (women, slaves, foreigners).	Includes Sustainability
CL 440	Pompeii	Classics	Systematic survey of the archaeological remains of the buried city of Pompeii. Uses the unique evidence offered by Pompeii to examine the nature of municipal life in Roman Italy, including society, economy, politics, and private life.	Includes Sustainability
CL 228	Warfare in the Ancient World	Classics	Warfare has been a constant feature of societies and civilizations. Provides a historically anchored survey of warfare in the ancient Mediterranean civilizations, particularly those of Greece and Rome. Not simply a history of strategies and battles, our intent is to look at the wide range of issues influencing and impacted by armed conflict.	Includes Sustainability
CL 200	Intro Classical Archeology	Classics	present. Relates the archaeologists and their discoveries to the general development of classical archaeology and the cultural history of the era in which they took place Three credit. No Prerequisites (Dyson). This course will offer a broad overview of the civilizations of ancient Greece and Italy through the perspective of their material culture, primarily architecture, sculpture, and painting, as well as minor arts and crafts (for example, pottery and metalwork). These five civilizations: Minoan, Mycenaean, Greek, Etruscan, and Roman, comprise the core area for the discipline known as Classical Archaeology.	Includes Sustainability
COM 380	Health Communication	Communication	Examines health communication and health communication campaigns in the interpersonal, organizational, and mass communication contexts with an emphasis on communication research.	Includes Sustainability
COM 202	Intercultural Communication	Communication	Explores cultural factors that impinge upon the process of human communication; gives attention to nonverbal and verbal factors, as well as international mass media.	Includes Sustainability
CSE 442	Software Engineering	Computer Science and Engineering	Examines in detail the software development process. Topics include software life-cycle models; architectural and design approaches; various techniques for systematic software testing; coding and documentation strategies; project management; customer relations; the social, ethical, and legal aspects of computing; and the impact of economic, environmental, safety, manufacturability, and sustainability factors on design. Students in this course participate in a real-world project from conception to implementation.	Includes Sustainability

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CSE 453	Hardware/Software Integrated Systems Design	Computer Science and Engineering	learned from previous hardware and software-oriented courses, students form multidisciplinary workgroups and are given tools, parts, goals, and constraints, all of which define the integrated design setting. These workgroups identify, formulate, and solve the hardware and software problems posed by their project, and defend their realization concepts at key intervals during the project build-out. Projects are tested, and a report analyzing the level of satisfaction of design and performance specifications submitted. Each group prepares a 'rollout' presentation, which includes a demonstration of their project in	Includes Sustainability
CPM 205	Social Justice	Cora P. Maloney College	Introduces students to the many concepts of community organizations and how they are formed, structured, and managed. The course is conducted through lectures, readings, and writing assignments; community visits; and guest lectures. Analyzes community organizing as a profession practiced by various individuals and groups.	Includes Sustainability
CEP 400	Educational Psychology	Counseling, School and Educational Psychology	This course is designed to provide students with an introduction to the field of Educational Psychology and its contributions to classroom teaching and learning. Through lectures and interactive exercises, we will explore the dynamic relationship between the student, the teacher and the learning environment. Discussions will focus on both theoretical models and real world applications, with emphasis on contemporary approaches to stimulating active and reflective learning.	Includes Sustainability
ECO 470	Economics of Regulation	Economics	Analyzes the economic criteria for regulatory policies and the effects of regulation in various sectors of the economy.	Includes Sustainability
ECO 181	Intro to Macroeconomics	Economics	Covers principles of employment, inflation, business cycles, and growth; also considers policies for economic stabilization and full employment. May be taken independently of ECO 182. This course is a controlled enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may repeat the course in the summer or only in the fall or spring semester with a petition to the College of Arts and Sciences Deans' Office.	Includes Sustainability
ECO 182	Intro to Microeconomics	Economics	Covers principles of price determination, creation of value, distribution of income, competition, and principles of international trade. May be taken independently of ECO 181. This course is a controlled enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may repeat the course in the summer or only in the fall or spring semester with a petition to the College of Arts and Sciences Deans' Office.	Includes Sustainability
ECO 435	International Economics	Economics	Covers the classical law of comparative advantage; modern theories of trade (including the Heckscher-Ohlin and specific-factor models of trade); growth and trade; international factor movements; multinational corporations; trade-related international organizations; the effects of trade policies with tariffs, quotas, and other instruments; preferential trading arrangements; and topics in economic integration. Also covers briefly the balance of payments, foreign exchange markets, and the international monetary system.	Includes Sustainability
ECO 467	Economics & Game Theory	Economics	Examines two- and N-person game theory, cooperative and noncooperative games, normal and extensive-form games, and complete and incomplete information games.	Includes Sustainability
ECO 412	Environmental Economics	Economics	Examines uses of the natural environment; their respective costs and benefits (and distributions thereof), and the problem of policy design to optimize environmental use and quality.	Includes Sustainability
ECO 421	Urban Economics	Economics	Explores theories of the existence and growth of urban economies, location and its relationship to industrial organization and trade, and the internal organization of cities. Further covers land and housing markets; pricing and resource allocation in urban transportation; the economics of local government, local public goods, property taxes, and zoning; and the economics of income and race segregation in urban areas. ECO 421 and ECO 209 cannot both be taken for credit.	Includes Sustainability
ECO 405	Microeconomic Theory	Economics	Intermediate level. Examines economic theory dealing with the economics of price determination, value, distribution, and competition.	Includes Sustainability
ECO 407	Macroeconomic Theory	Economics	Intermediate level. Uses economic theory to explain the causes of inflation, business fluctuations, unemployment, and economic growth.	Includes Sustainability
EE 336	Fundamentals of Energy Systems	Electrical Engineering	All aspects of electrical energy generation (ac and dc, conventional and alternative), transmission and distribution and utilization with the goal of providing students an idea of how electrical energy affects their life and the world around them. It will provide a firm foundation in phasors, 3 phase circuits, static electromechanical energy conversion, electrical safety, and system level circuit control.	Includes Sustainability

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Course Number	Course Name	Department/ Program	Course Description	Sustainability Course or Course Includes Sustainability
EE 455	Photonic Devices	Electrical Engineering	First, discusses the basics of p-n junctions including current flow, and recombination. In addition, discusses light emitting diode light sources, fundamentals and applications. The course ends with a discussion of solar cell fundamentals, heterojunctions, metal-insulator-semiconductor devices, design, and recent advances.	Includes Sustainability
EE 471	Sustainable Energy Systems	Electrical Engineering	How can we provide clean, safe, sustainable energy supplies for the U.S. and world as a whole during the twenty-first century, despite rising population levels and increasing affluence? Examines current and potential energy systems, with special emphasis on meeting energy needs in a sustainable manner. Different renewable and conventional energy technologies will be presented and their attributes described within a global energy/environment system. Discusses political, social, and economic considerations on the development of sustainable energy/environment policies.	Includes Sustainability
EE 482	Power Systems Engineering I	Electrical Engineering	Surveys the field of modern energy systems, with the foundation being classical electrical power and related power electronics. Topics include complex power, per unit analysis, transmission line parameters and modeling, and compensation. Students also study alternative energy systems in this course. Course also includes use of a Power Simulation Program in which modeling can be done. This program is also used for the final system design project paper which accounts for 50% of the course grade.	Includes Sustainability
EE 583	Power Systems Engineering 2	Electrical Engineering	Investigate transmission line characteristics of aerial and underground lines including development of their symmetrical component sequence impedances. Steady-state performance of systems including methods of network solutions	Includes Sustainability
EAS 202	Impact On Society	Engineering and Applied Sciences	elucidating how engineers can make a difference in meeting key societal needs. The course focus is the National Academy of Engineering's 'Grand Challenges' for the future. It includes a series of interactive presentations by engineering faculty who are experts in these areas, offering an understanding both of these problems and engineering approaches to solving them. Students also explore a self-selected area of personal interest as a step toward identifying possible niches for their own career path. EAS 140 is a required pre-requisite.	Includes Sustainability
ENG 383	Studies in World Literature	English	literature from geographically and culturally diverse places that undermines the usual classification of literary texts in terms of national and regional literatures B: Literature in Translation Major texts in English translation, viewed in light of cultural and aesthetic cross-currents. C: Arab Literature Studies in literature by Arab writers in English translation, including focus on topics like Arab women writers, the Arab novel, and Palestinian literature. D: World Jewish Literature Study of Jewish writing, which has been written in all the languages Jews have spoken, including Yiddish, Ladino, Russian, German, Serbian,	Sustainability Course
ENG 375	Heaven, Hell, and Judgment	English	ideas and images of eternal reward and punishment ♦ stories and pictures of heaven, hell, and judgment from ancient Sumner to modern film. We will begin with the oldest known story of the underworld, five-thousand year-old Sumerian goddess Inannas descent From the Great Above to the Great Below. We'll look at the Egyptian weighing of the soul at death against the feather of Maat or justice, at Odysseus and Aeneas explorations of the worlds of the dead, at Platos and popular ideas of whats next. We'll also consider Biblical apocalypses, Sheol, Hades and heaven, medieval journeys to heaven and hell, Dantes	Includes Sustainability
ENG 276	Literature and the Law	English	to the relationship between legal interpretation and textual analysis. For example: Morani Kornberg-Weiss, Language and the Law In the study and practice of law, truth and justice rely on narration. Words, after all, are essential for lawyers, defendants, and juries. Rhetoric and argumentation help one make a case. This course invites students to explore the nature of law, ethics, and social justice through the prism of literature and language. We will consider the modes in which law and literature intersect and think about the function of narrative and storytelling, form and sequence, punishment, interpretation, ethics,	Includes Sustainability
ENG 495	Supervised Undergraduate Teaching	English	For example: R. Reid English 495 introduces students to theories of writing and writing consultancy. The skills developed in this class will help students to leverage writing skills into professional contexts and provide experience with teaching and mentoring in both real and virtual environments.	Includes Sustainability
ENG 435	Advanced Creative Writing: Fiction	English	their peers. Geared to help students produce mature work with an aim toward future publication. For example: Prof. D. Anastasopoulos This advanced workshop is specifically designed to give students the opportunity to engage other students work and to receive substantial feedback on their fictions-in-progress: to help students wrestle with, and refine, their craft. While the goal of this course is to help students produce two polished fictions, our workshop conversations will most frequently focus on how young writers can more carefully craft their prose by developing their ear for language. If, as Blanchot poses,	Includes Sustainability
ENG 404	Medieval Studies	English	Western critical engagement with the environment too often privilege modernity, for example seeing the Romantic period as launching an era of Nature. Yet medieval literature is often deeply engaged with environmental issues, meditating on humans immersion in a dynamic material world shared with animal, vegetable, and other entities. Our course will explore the poetics of nature in medieval romance, examining how landscapes and life-forms interact in the pre-modern Western imagination. We will explore the animalized worlds of otherworldly deer, voracious werewolves, and aestheticized birds.	Includes Sustainability
END 302	Sustainable Urban Environments	Environmental Design	Examines the relationship of urban and natural environments, focusing on sustainable development and global climate change. Emphasis on biodiversity, pollution, efficiency, and renewable energy. Considers appropriate use of resources that are environmentally sound. Involves lectures, discussions, and fieldwork. May be offered on intermittent basis.	Sustainability Course
END 212	Urban and Environmental Planning	Environmental Design	environments in which they are situated, with the creation of sustainable communities as the overall goal. Through urban and environmental planning, sustainable neighborhoods are seen as places which maintain and restore our natural and built environments, thereby creating a higher quality of life for residents. Topics include the foundations of urban and environmental planning, techniques used, the development process, and urban design issues. Examines urban and environmental planning foci, such as urbanization, physical sprawl, environmental design, land use, sustainable development,	Sustainability Course

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END 450	Environmental Design Workshop 3: Comprehensive Projects and Processes	Environmental Design	A majors-only core workshop. Engages students in community planning and environmental design fieldwork in Western New York. Under the instructor's supervision, students work with clients and neighborhood groups to understand complex community planning and environmental issues, research best practices, and develop final plans, comprehensive designs, and presentations. Involves lectures, discussions, and fieldwork. An undergraduate senior capstone studio.	Includes Sustainability
END 360	Environmental Design Workshop 2: Graphic Communications	Environmental Design	A majors-only core workshop. Examines modes of visual literacy for comprehending the built environment. Introduces rudimentary graphic representation skills for visually communicating urban planning and design concepts through readings and hands-on exercises. Class activities include drawing, drafting, design fundamentals, generating computer graphics, and urban observation. Involves lectures, discussions, and fieldwork.	Includes Sustainability
END 350	Env Dsn Workshop 1: Methods of Design Inquiry	Environmental Design	A majors-only core workshop. Introduces how to integrate research and environmental design. Provides students with methodologies in gathering, analyzing, interpreting, and communicating qualitative and quantitative information about the contemporary physical and urban environment. Data sources include U.S. Census materials, state and regional agency databases, community master plans, historical archives, and online and hardcopy reports and surveys. Involves lectures, discussions, and fieldwork.	Includes Sustainability
END 498	Research Projects in Environmental Design	Environmental Design	A required senior undergraduate research and creative activity course. Engages students in environmental design methodologies and individual research on a topic of contemporary interest. Topics vary annually. In the past this course addressed community gardens, urban food security, active living, community design, urban/suburban relations, urban subcultures, urban hazards and disasters, environmental planning, and urban development.	Includes Sustainability
END 120	Introduction to Urban Environments	Environmental Design	shape and reshape our urban environments. Examines concepts and content related to cities, suburbs, and metropolitan regions within and outside the U.S. From multidisciplinary perspectives, covers media images of cities and suburbs, patterns and trends in urban environments over time and place, urban observation, demographics, culture, and design. Assesses contemporary urban issues, including race relations, environmental issues, and population problems. Involves lectures, discussions, and fieldwork. Open to non-majors.	Includes Sustainability
END 363	Cities and Globalization	Environmental Design	Considers "world cities" and how global trends and forces shape the community design, politics, social life, environment, and economies of urban places. Involves lectures, discussions, and fieldwork. May be offered on an intermittent basis.	Includes Sustainability
END 301	Perspectives On Land Use and Development	Environmental Design	Covers concepts and practices of urban land use and development in U.S. Topics include zoning, growth management, site design, environmental issues and land use evolution. Involves lectures, discussions, and fieldwork.	Includes Sustainability
END 275	Environment & Design	Environmental Design	environments, and landscapes. Introduces new ways of seeing, understanding, and communicating landscape design. Considers problems in the landscaped environment including greenspace, complex urban centers, post-industrial wastelands, physical infrastructure, and entire watersheds. Reviews how the planning and development of our landscaped settings affects quality of life in physical environments within the context of environmental design. May be offered on an intermittent basis. Open to all undergraduate majors.	Includes Sustainability
END 426	Site Planning and Development	Environmental Design	Examines site planning, design, and development of residential, commercial, and industrial properties within various community settings. Reviews property site selection procedures and community landscape planning. Investigates activities within site development including planning, design, aesthetics, landform preparations, and renovations within urban environments. May be offered on an intermittent basis.	Includes Sustainability
END 308	Problem Solving in Urban Environments (Health and Urban Environments)	Environmental Design	Explores current health issues found in urban and physical environments. Examines diverse public health conditions, including environmentally-caused diseases, pollution-related diseases, aging populations, and the globalization of illness. Considers various community-based social and physical environmental solutions. Involves lectures, discussions, and fieldwork. May be offered on an intermittent basis.	Includes Sustainability
END 467	Legal Issues in Planning and Development	Environmental Design	Explores historical and legal foundations of planning and development. Provides a legal perspective on land use, zoning policies, environmental regulations, housing, and other areas of interest. Reviews political, legal, and administrative institutions related to the planning and development process. May be offered on an intermittent basis.	Includes Sustainability
END 279	Exploring the Design of Buffalo Niagara	Environmental Design	improving the quality of life, and protecting the environment of Buffalo Niagara for future generations. Involves historical plus current plans and designs accompanied with lectures, discussions, films, and readings. Introduces urban design and regional development theory and practice. Provides and opportunity to understand community design, the full scope of small to large scale regional work, and comprehend location of place in relationship to the Buffalo Niagara region. Researches the history of Buffalo Niagara communities, examine the place as planned, and critically interpret its history, plans, and	Includes Sustainability
END 428	Foundations of Historic Preservation	Environmental Design	Historic preservation theory related to urban and environmental planning, emphasizing preservation practice, including tools of effective preservation, legislation, community roles, economics, adaptive use, and management. Involves lectures, discussions, and fieldwork. May be offered on an intermittent basis.	Includes Sustainability

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END 402	Real Estate Development Fundamentals	Environmental Design	Introduces students to the fundamentals of real estate development, including planning, site acquisition, project feasibility, finance, and physical development in urban environments. Uses case studies, small group activities, fieldwork, readings, and discussions. May be offered on an intermittent basis.	Includes Sustainability
END 494	Visions of the City	Environmental Design	Student-led, faculty-guided reading course covers classic and contemporary books on the natural, built, and urban environments. An undergraduate senior capstone course.	Includes Sustainability
END 406	Housing & Community Development	Environmental Design	Studies theories, concepts, and practices of housing and community development, emphasizing neighborhood planning and design in urban environments. Involves lectures, discussions, and fieldwork. May be offered on an intermittent basis.	Includes Sustainability
EEH 549	Environmental Health	Environmental Health	Intermediate course that explores the role of environmental factors in health with an emphasis on environmental assessment and control of environmental hazards. Topics include application of toxicologic and epidemiologic methods in assessing risk and setting exposure limits; the nature of and control of hazards associated with food, water, air, solid and liquid waste, occupation, and radiation; risk communication and management, environmental justice; and environmental laws. The course concludes by examining the impact of human activity, such as energy use and pollution, on the environment and how human-induced environmental change, in turn, impacts public health and that of the planet as a whole.	Includes Sustainability
EEH 649	Advanced Environmental Health Sciences	Environmental Health	Advanced course designed to provide students with the latest knowledge and an in-depth discussion of how the environment interacts with human biological systems and potentiates various health effects over the life cycle. The course includes a detailed examination of environmental hazards, exposure assessment, human susceptibility, biological response pathways, application of biomarkers in environmental health studies and the disease burden of environmental exposure. The course focuses on three major environmental topics: air pollution, water pollution and food safety.	Includes Sustainability
ES 468	Epidemiology/Public Health	Exercise Science	public health concepts. Students will learn basic epidemiologic principles and methods and apply them to current public health issues, particularly those related to their discipline. Topics include an overview and history of public health, how epidemiologic methods have evolved over time to help us study disease, the natural history and transmission of disease, investigation of an outbreak, basic epidemiologic study designs, measures of disease occurrence, measures of association and risk, criteria used to assess causal relationships in health, and basic principles of population screening and surveillance.	Includes Sustainability
UGC 303	Great Discoveries in Science: The Macroworld	General Education Program	great discoveries of science, presenting a particular body of scientific facts and concepts and connecting them with the process of science, related history and philosophy, and the interdependence of science and technology. These courses engage non-science students in a meaningful analysis of scientific developments and methodology, building on the student's prior knowledge of science, social science, arts and literature. These courses emphasize the central ideas that set the framework for a discipline and its great discoveries. Selected examples from diverse fields provide a breadth that complements the	Includes Sustainability
UGC 302	Great Discoveries in Science: The Microworld	General Education Program	and UGC 303 focus upon selected great discoveries of science, presenting a particular body of scientific facts and concepts and connecting them with the process of science, related history and philosophy, and the interdependence of science and technology. These courses engage non-science students in a meaningful analysis of scientific developments and methodology, building on the student's prior knowledge of science, social science, arts and literature. These courses emphasize the central ideas that set the framework for a discipline and its great discoveries. Selected examples from diverse fields provide a	Includes Sustainability
UGC 111	World Civilizations I	General Education Program	the peoples, forces, and ideas that have shaped the way individuals have experienced (and still do experience) the world. Features global perspectives, focuses on the origins and development, geographical context, and the interactions of world cultures. All sections of the course share common goals. Different sections emphasize different themes and perspectives. This course is a controlled enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may repeat the course in the summer or winter; or only in the fall or spring semester with a	Includes Sustainability
UGC 112	World Civilization 2	General Education Program	concerns the peoples, forces, and ideas that have shaped the way individuals have experienced (and still do experience) the world. Features global perspectives, focuses on the origins and development, geographical context, and the interactions of world cultures. All sections of the course share common goals. Different sections emphasize different themes and perspectives. This course is a controlled enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may repeat the course in the summer or winter; or only in the fall or spring semester	Includes Sustainability
UGC 211	American Pluralism	General Education Program	UGC 211 is usually completed after UGC 111-UGC 112. Focuses on the changing nature of American society, examining the rich diversity of cultural experiences in America and issues associated with diversity. Introduces students to five important areas of American experience and culture: race, gender, ethnicity, class, and religious sectarianism. Examines writings by and about Americans of color; women; and people from diverse ethnic, class, and religious groups. Approaches their experiences through a number of traditional academic disciplines.	Includes Sustainability
MGG 601	Corporate Social Responsibility & Sustainability	General Management	to teach students about how to be good business managers who can: (1) recognize the ethical and social responsibilities (and often dilemmas) that typically permeate many of their professional decision contexts; and (2) use that recognition to proactively seek out strategies that enable them to "do well by doing good." At a much broader level, this course is related to the ongoing societal dialogue about what our society should be and what role should businesses play in achieving that goal. It will help students in developing an intelligent understanding of that continuing, evolving, non-linear dialogue.	Sustainability Course
MGG 150	Business & Society	General Management	Comprehensively provides a broad understanding of business, including various functions and their interrelationships; terminology; management fundamentals and competitive factors; legal and ethical issues; and consideration of various external elements, including society at large. Required for Management Minor.	Includes Sustainability

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GEO 106	Earth Systems Science II	Geography	Examines climate changes of the past, present and future. Considers the various causes of past and present climate change and how to predict future changes. Describes predicted environmental and social impacts of, and possible solutions to, future climate change.	Sustainability Course
GEO 103	Geog of Economic Systems	Geography	Examines the diverse economic systems that characterize a world economy in rapid transition. Highlights the complex processes of globalization and its impact on regions, cities, and countries. Examines the organization of economic activities and resources in the global economy.	Sustainability Course
GEO 101	Earth Systems Science I	Geography	Earth Systems Science examines modern environmental problems through quantitative methods, analysis, and modeling grounded in basic and applied science and research. The goal of the course is to introduce students to the fundamental processes that dominate the atmosphere, hydrosphere, lithosphere, and biosphere, their characteristics and complex interactions, and their impact on human life and society.	Sustainability Course
GEO 100	Geog Perspect & World Iss	Geography	Examines the geography of the emerging global village, especially the stress between the increasing globalization of human societies and natural habitats, and their idiosyncratic traits. Deeply rooted in today's changing world, the course surveys regions of the world and the contemporary issues facing them.	Sustainability Course
GEO 435	Conservation Biogeography	Geography	Examines components of biodiversity: what it is, why we like it, where it is highest, and what threatens it. Focuses on the application of spatial solutions to biodiversity maintenance in wildlands, and to biodiversity management in working landscapes (especially logged but also farmed). Case studies and a field trip are employed to explore the usefulness of the methods.	Includes Sustainability
GEO 345	Water Resources	Geography	Examines the occurrence, use, management, and conservation of water and water resources in the U.S. and around the world. The course further discusses the environmental, economic, and social implications of floods, droughts, dams, water usage, and waste water, as well as current issues in water quality, water pollution, and water resource regulation.	Includes Sustainability
GEO 330	Dynamics of International Business	Geography	Examines the rapidly changing dynamics of the international business environment and its impact on corporate strategies and patterns of international trade, investment and development. Covers the political, legal, technological and cultural underpinnings of the global economy. Provides students with a solid foundation for conducting international business research and making sense of current events.	Includes Sustainability
GEO 448	Stream Restoration	Geography	Examines the scientific basis for stream restoration programs in the U.S. and worldwide through a consideration of interdisciplinary themes and practices. Participants will actively discuss river processes, aquatic ecology, restoration needs and goals, restoration approaches, ecological economics, and the uncertainty and sustainability of restoration designs. Students are exposed to a variety of stream restoration concepts through lectures, seminars, and independent projects.	Includes Sustainability
GEO 577	Environmental Statistics	Geography	In recent years, considerable amounts of advances have been made in geographic information system (GIS) and remote sensing (RS) through the potential of GIS and RS within the environmental sciences is limited by uncertainty, particularly, in connection with data sets and methods used. This course will introduce statistical methods for spatial data analysis and uncertainty modeling relevant to broad disciplines including geography, geology, environmental studies, civil & environmental engineering, and planning. General overviews on statistical methods for spatial data fusion and uncertainty modeling will be presented along with hand-on exercises using R software. Students are more than welcome to bring their own data and research problems.	Includes Sustainability
GEO 350	Landform Field and Laboratory Techniques	Geography	Introduces data collection techniques in Earth Systems Science. Students will actively participate in the collection and analysis of data using a wide range of field and laboratory equipment, with all activities linked to relevant environmental and geomorphic issues. Students will develop and enhance their skills in data collection, reduction, and analysis, analytical thinking, scientific writing, and the preparation of professional reports.	Includes Sustainability
GEO 334	International Business Cultures (formerly called "International Environment and and Commercial Problems")	Geography	Introduces students to the interconnections among culture, social expectations, and international business. Covers cross-cultural communication and negotiation, cross-cultural management and alliance formation, and corporate social and environmental responsibility. The course is designed to challenge students to understand difference and to overcome stereotypes in thinking about the operation of business in different parts of the world.	Includes Sustainability
GEO 352	Introduction to Soils	Geography	Introduces the concepts of soil science, composition and classification of soils, and the spatial distribution of major soil categories. Analyzes soil properties, soil/plant relationships, nutrients, land management practices, and ecological and engineering problems.	Includes Sustainability
GEO 102	Intro to Human Geography	Geography	Introduction to thinking about human activities from a geographic perspective. While considering the "why of where," students will be exposed to the global dynamics of urbanization, industrialization, migration, economic development, international relations, geopolitics, and cultural geographies.	Includes Sustainability

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GEO 333	Bases of World Commerce	Geography	Involves a theoretical and empirical study of the spatial aspects of commodity flows among countries and regions; also examines conditions leading to trade, and to barriers to the movement of goods.	Includes Sustainability
GEO 366	Urban Geography	Geography	Provides an introduction to the knowledge areas of urban systems and structure, and a brief overview of fundamentals and general information that one needs to build upon in order to become a professional urban geographer. The course examines the formation and growth dynamics of cities, interprets the mechanism under which the urban space functions, and observes the industrial, residential, migratory, environmental, planning and transportation aspects of urban society.	Includes Sustainability
GEO 412	Geography of Health	Geography	Studies human disease and health from an ecological perspective. Students gain an appreciation for the geographic variation in the rates of both infectious and chronic diseases. The effect of the environment will be examined in terms of population density, climate, socio-economic conditions, political situation, mobility, urbanization, pollution, cultural practices, and access to health care.	Includes Sustainability
GLY 312	Surface Processes and Hydrology	Geology	Acquaints students with near-surface geomorphic and hydrologic processes, their interpretation, and their role in shaping landforms. Studies the occurrence and movement of water on and within the earth including basic hydrostatics, hydrology, hydrogeology and open-channel flow hydraulics. Introduces quantitative and computer-based methods of analysis in geomorphology, hydrology and environmental geology. Requires labs and field trips.	Includes Sustainability
GLY 424	Extraterrestrial Volcanism	Geology	Examines volcanic deposits on solid bodies throughout the solar system, including the Moon, Mars, Venus, Io and Europa. Emphasizes understanding how different environments affect the mechanics and subsequent deposits of volcanic eruptions.	Includes Sustainability
GLY 215	Sedimentary Geology & Paleontology	Geology	Introduction to the types and origins of sedimentary rocks and their depositional environments, stratigraphic orientation, fossil content, and relationship to geologic time. Requires labs and field trip.	Includes Sustainability
GLY 462	Aqueous Geochemistry	Geology	Presents the chemical principles governing natural water chemistry and the behavior of anthropogenic pollutants. Emphasizes topics such as the evolution of groundwater chemistry, thermodynamics of water-rock interactions at low temperatures, and prediction of pollutant fate in aquatic systems.	Includes Sustainability
GLY 309	Ecology	Geology	Processes that control the abundance and distribution of organisms in their natural environments; emphasizing population, community and evolutionary ecology.	Includes Sustainability
GLY 597	Volcanology Seminar	Geology	Geology is primarily the study of the Earth. However, the term 'geology' applies to numerous scientific subdisciplines: environmental geology, geochemistry, geophysics, glaciology, hydrogeology, mineralogy, paleontology, planetary geology, stratigraphy, structural geology, and volcanology. These subdisciplines interact with each other and collectively focus on increasing our knowledge of Earth, the processes that shape it, and our physical and evolutionary relations to Earth and to its other inhabitants.	Includes Sustainability
GGG 241	Women in Developing Countries, Socio-Economic and Political Perspectives	Global Gender Studies	discourses that construct their experiences. Analyzes women's organizing, advocacy and social mobilization to engender change and equity. Introduction to a broad, interdisciplinary and international literature focusing on current and emerging issues related to women's work and globalization; poverty and inequality; displacement and environmental degradation; social practices such as female genital mutilation; and HIV/AIDS, within national, regional, and global contexts. Course will dwell on a variety of teaching material such as videos, life histories, case studies and policy documents combined with	Includes Sustainability
HIS 327	The City in American History	History	who viewed the city as a center of their utopian dreams. Studying urban life, however, also reveals how racial prejudice, concentrations of wealth, and political corruption have shaped the American city. This course will explore these contradictions through an examination of the growth and development of urban centers in the United States in the nineteenth and twentieth centuries. Major American cities will also be compared to cities in Europe and Latin America.	Includes Sustainability
HIS 328	History of Brazil	History	Examines major topics in Brazilian History, including the conquest of Amerindians, the consolidation of Portuguese colonial society, the role of slavery and abolition, the interplay of political independence and economic independence, and the contest between authoritarian rule and democracy. Considers Brazilian women's lives, race and ethnic relations, environmental controversies, and the cultural expressions of religion, music, and sport - all in historical perspective. Covers five centuries of social change, from the arrival of European colonists to the recent past. AAL	Includes Sustainability
HIS 389	Pirates, Drifters, Fishers: Maritime Southeast Asia	History	This course examines key moments and longer-term dynamics of Southeast Asia's maritime history. We will consider how the sea affected state-building from its earliest days, its impact on pre-colonial international relations, its role as a conduit of the desire for conquest and for exotic goods, and the question of piracy, past and present.	Includes Sustainability

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HIS 319	World Between the Wars	History	the great period of crisis in contemporary history. This concept will be considered from diverse perspectives, including the changing dynamics of international relations, rapid social and cultural transformations, and the radical new politics ushered in by World War I and its aftermath. The course will focus on the major conflicts of the period, particularly those resulting from World War I and leading to World War II. Considerable attention will be given to the formation of the Soviet Union; the formation of the modern Middle East; the revolutionary civil wars in Spain, China, and elsewhere; the crisis of liberal democracies;	Includes Sustainability
IE 320	Engineering Economy	Industrial Engineering	Applied concepts of economic decision making, including present worth analysis, cash-flow equivalence, replacement analysis, equipment selection. Open to students in any discipline.	Includes Sustainability
JDS 284	Justice in Bibles, Law, and Philosophy	Jewish Studies	A comparative study of the relationship between justice, law, and society in pagan, Jewish, Christian, and Muslim Thought.	Includes Sustainability
JDS 103	Introduction to Judaism	Jewish Studies	Survey of Judaism and the rich Jewish legacy: basic philosophical, theological, social, and political values and practices of Judaism as they developed over time in a variety of social and political environments.	Includes Sustainability
JDS 396	Medicine of the Soul: Religion and Science in Jewish Thought	Jewish Studies	This course covers the history of the relationship of Judaism to science, philosophy and medicine from the 6th Century until today, tracing the relationship between conceptions of wellness and virtue. We will ask: can the Jewish tradition respond to the scientific critiques of religion by Richard Dawkins and Christopher Hitchens?	Includes Sustainability
JDS 204	Introduction to Jewish Ethics	Jewish Studies	This course will examine the meaning of Jewish ethics as a development of character and the obedience to universal principles of justice. We will then examine Jewish perspectives on contemporary ethical issues such as war and peace, feminism, abortion, economics and charity, and the environment.	Includes Sustainability
LAW 545	Environmental Law: Natural Resources	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Sustainability Course
LAW 567	Greening Buffalo	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Sustainability Course
LAW 568	Environ Law - Pollution	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Sustainability Course
LAW 670	The Global Business Environment: Closing a Deal Across the U.S.-Canada Border	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Includes Sustainability

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LAW 695	Land Use Planning	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Includes Sustainability
LAW 742	Public Interest Environmental Law	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Includes Sustainability
LAW 755	Environmental Justice Administrative & Regulatory Advocacy	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Includes Sustainability
LAW 804	Current Topics in Environmental Law	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Includes Sustainability
LAW 806	Intl Environmental Law	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Includes Sustainability
LAW 978	Economic Justice Law and Policy Clinic	Law	Course includes the environmental and social aspects of sustainability. Program description: Environmental law plays a major role in structuring the relationship between human beings and the world around them. Almost every kind of legal practice today touches some aspect of environmental law. Lawyers practice environmental law in large and small private law firms, in the offices of in-house corporate counsel in trade associations, in federal, state and local government agencies, in the offices of state attorneys general and the U.S. Department of Justice, and in many non-governmental organizations. Whether future employment entails advocating the position of a public interest group, a corporate client, a government agency, or a private citizen, the Environmental Law Program is designed to meet the need for knowledgeable and skillful application of legal principles and techniques to environmental and natural resource problems.	Includes Sustainability
LAI 474	Teaching the Exceptional Learner in the Regular Education Classroom	Learning and Instruction	disabilities and special health-care needs in inclusive environments. Students will be provided with techniques designed to enhance academic performance, classroom behavior, and social acceptance for students with disabilities and special needs. Students will learn skills enabling them to (1) differentiate and individualize instruction for students with disabilities and special needs, (2) become familiar with instructional and assistive technologies, (3) implement multiple research-validated instructional strategies, (4) formally and informally assess learning of diverse students, (5) manage classroom behavior of	Includes Sustainability
LAI 590	Technology, Society and Human	Learning and Instruction	This course introduces pre-service and in-service teachers of second and foreign languages to the use of Internet tools to enhance language learning. Participants will utilize these tools not only to improve the communication skills of L2 learners, but also to collaborate with professional colleagues in order to create a personal learning network for lifelong learning. Topics will include the most recent Internet tools. Since technology is changing exponentially, the tools used will vary but the choice of tools to explore will be based on their usefulness for communication, interactivity, and collaboration.	Includes Sustainability
LAI 350	Introduction to Education	Learning and Instruction	This course is intended for students contemplating a career in education. It is designed to provide information and a forum for discussion of American education. Among the topics covered are a brief history of American education, the learning environment, teachers, diverse learners (ethnically, economically, and different abilities), classroom management, and issues facing all schools. In addition, students will become generally familiar with the New York State Learning Standards. A group school visit is also a component of the course as are 10 supervised classroom contact hours.	Includes Sustainability

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LAI 416	Early Childhood Theory and Practice	Learning and Instruction	Undergraduate students explore their role as a reflective teacher. Curriculum based on early childhood (EC) theories is explored. Methods of designing appropriate EC environments are taught. Examines the teacher's role in documenting children's learning. Guides students toward active membership and involvement in professional organizations.	Includes Sustainability
JLS 145	Urban Development, Law, and Policy	Legal Studies	Acquaints students with the developmental patterns of cities, gives them a basic understanding of city government forms and how these fit into the state and national governmental systems, and focuses on cities from three perspectives: 1) spatial growth and development, 2) governmental structure and lawmaking authority, and (3) policies that shaped cities or were designed to change them in some way.	Includes Sustainability
LIN 421	Linguistic Anthropology	Linguistics	Relationship between language and culture cross-culturally from the point of view of linguistic anthropology. Relies on primary readings, looking both at descriptive studies of particular languages and cultures, and theoretical issues, specifically the Linguistic Relativity Hypothesis.	Includes Sustainability
MGE 604	Global Econ & Bus Firm	Management – Economics	Economics is the foundation of all business decision-making and functions. This course covers the necessary basics of economics, both qualitatively and quantitatively. It applies economic theory and methodology to everyday business problems and issues. Topics include demand analysis, cost estimation, pricing and profitability. Theory will be supplemented with real-world hands-on practice. Every attempt will be made to show how economics applies to all functional areas in business.	Includes Sustainability
MGI 301	Human Resources Management and Labor Relations for Managers	Management – Human Resources and Industrial Relations	Introduces the management of human resources (HR) at the level of the firm. Focuses on the systems and practices required to implement such HR functions as selection, development, compensation, and performance appraisal. Evaluates these HR decisions with a framework that considers the influence of legal and market environments, as well as union and nonunion settings. Course assignments emphasize managerial applications.	Includes Sustainability
MGT 401	Public Policy, Law and Management	Management – Management and Policy	Focuses on the regulatory and policy implications of the interaction between government and private business entities, including corporations, partnerships and other business forms. Designed to help students understand the legal environment in which business organizations operate. This course also examines the role of ethics in business decision-making and the distinction between ethical and legal constraints. Includes discussion of specific laws affecting business and management, including securities regulation, antitrust statutes, and the Sarbanes-Oxley legislation of 2002.	Includes Sustainability
MGM 483	International Marketing	Management – Marketing	business students with an understanding of international marketing is dramatically increasing. Thus, it becomes increasingly critical for undergraduate marketing students to: (1) develop an understanding of the concepts, principles, and practices of marketing in the global environment; (2) develop familiarity with the problems involved in marketing across national boundaries; and (3) gain knowledge of tools and approaches to develop and control marketing programs on a global basis.	Includes Sustainability
MGO 636	Supply Chain Modeling, Design, and Optimization	Management – Organizational and Behavioral Science	and techniques for design and optimization of global supply chain networks. The course also covers information systems and technologies for supply chain planning and coordination. The topics covered include: supply chain strategy formulation, performance metrics, new forecasting models applicable for supply chain contexts, newsvendor models for capacity and aggregate planning, models for location and design of supply and distribution entities, inter-organizational planning, advanced planning systems, multi-echelon inventory management techniques, distribution requirements planning (DRP) systems,	Sustainability Course
MGO 795	Doctoral Seminar on Operations and Supply Chain Management	Management – Organizational and Behavioral Science	This seminar provides a critical review of theory and empirical research in the supply chain and operations management area, along with closely related areas such as e-commerce, and marketing management and logistics. Particular emphasis will be on exposing students to seminal works in modeling and empirical research methods that have been employed to investigate new issues of topical interest in the supply chain & e-commerce areas. We will cover an eclectic collection of state-of-the-art research articles that may be helpful in developing viable research agendas for doctoral students.	Sustainability Course
MGO 303	Supply Chain Management	Management – Organizational and Behavioral Science	functions within supply chains such as manufacturing, procurement, logistics and inter-organizational information and coordination are covered. The topics covered include qualitative & quantitative techniques for optimum configuration of supply chain and logistics, principles of postponement in design, processes and logistics, mass customization, global location factors for offices, plants and distribution centers, collaboration and coordination among various players in supply networks, vendor managed inventory (VMI), strategic alliances & partnering, purchasing and buyer-supplier relationships. Given the	Includes Sustainability
MGO 681	International Business Environment	Management – Organizational and Behavioral Science	including Beijing, Shanghai, Shenzhen, and Hong Kong, meetings with UB-MBA alumni in China, and visits to major Chinese firms and U.S. firms in China, such as HSBC Bank-Hong Kong and Shanghai, General Motors-Shanghai, The Chinese National Petroleum Corp., Huawei, J. Walter Thompson-China, and Kerry Logistics-Hong Kong.	Includes Sustainability
MGS 314	Applied Business Programming	Management – Systems	An introductory programming course with an emphasis on business applications and problem solving. Students will learn object oriented design techniques, programming structures, programming logic and user interface design. The software development environment used in this course is Microsoft Visual Studio and the Visual Basic .NET programming language.	Includes Sustainability
MAE 431	Energy Systems	Mechanical and Aerospace Engineering	Continuation of thermodynamics. Studies availability, psychrometrics, real gases, combustion thermochemistry, phase and chemical equilibrium, fuel cells, flow through nozzles, and blade passages.	Includes Sustainability

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MAE 204	Thermodynamics I	Mechanical and Aerospace Engineering	Covers conservation of mass, first and second laws of thermodynamics, thermodynamic properties, equilibrium, and their application to physical and chemical systems.	Includes Sustainability
MAE 451	Design Process and Methods	Mechanical and Aerospace Engineering	Discusses the fundamental concepts and activities of design processes. Investigates domain-independent topics of design processes. These topics include idea conception, teamwork, quality, experimental design, optimization, and technical communication. In addition, discusses fundamental methods of design, including decision making, conceptual design, cost evaluation, ethics issues, and intellectual property issues, which are investigated through interactive lectures and individual and group exercises.	Includes Sustainability
MAE 377	Product Design in a CAE Environment	Mechanical and Aerospace Engineering	Examines mechanical design of functional, pragmatic products from inception through implementation, including topics in computer-aided-design (CAD). Discusses the design process in the context of product redesign assignments using CAD. Includes a final design project with professional documentation including sketches, detailed and assembly CAD drawings, a comprehensive written design analysis, and cost breakdown.	Includes Sustainability
MAE 464	Manufacturing Automation	Mechanical and Aerospace Engineering	Discusses the theory of automation as it relates to manufacturing and design integration, including hardware, software, and algorithm issues involved in fast and flexible product development cycles. Studies strategies of automated manufacturing systems; CAD-CAM; and integration, programming, and simulation. Additional topics include Robotics (e.g. applications in welding, material handling, and human intensive processes), Reverse Engineering (e.g. modeling product from laser and CMM data of parts), Virtual Environments (e.g. industrial applications of virtual reality and prototyping), Intelligent Diagnostics (e.g. sensor fusion for machine tool monitoring), Automated Inspection (e.g. computer vision and methods of automated quality control), and Design for	Includes Sustainability
MAE 494	Design Project	Mechanical and Aerospace Engineering	Students working in teams of two or three under the supervision of a faculty member complete an original engineering design, which in some cases results in hardware. Design problems are drawn from industry and initiated by faculty. Where practical, two or more teams compete to solve the same problem. Teams meet individually with faculty on a weekly basis to discuss their projects.	Includes Sustainability
MAE 545	Heat Transfer 1	Mechanical and Aerospace Engineering	of the constitutive laws for conduction and radiation. Conduction: steady-state, transient, 1-D and multidimensional, moving boundary; method of Froebenius, separation of variables, transform techniques, similarity; approximate physical models and solution methods. Radiation: basic physical concepts, definition of intensity, blackbody radiation, properties of real materials, models of radiative properties, absorbing, emitting and scattering media, enclosure analysis.	Includes Sustainability
MAE 546	Heat Transfer 2	Mechanical and Aerospace Engineering	Forced convection: governing equations for laminar and turbulent flows, similarity analysis, flow and heat transfer in tubes, boundary layer theory, heat transfer in external flows, temperature dependent properties, and high speed applications. Natural convection: Boussinesq and other approximations, boundary layer equations for laminar and turbulent flows, similar and near similar solutions, horizontal and inclined surfaces, transient flows, and combined forced and natural convection regimes. Condensation and boiling: physics of the phenomena, correlations.	Includes Sustainability
MAE 570	Thermodynamics of Materials	Mechanical and Aerospace Engineering	Review of Classical Thermodynamics using the formalism based on the Entropy Maximum Postulates; and, an introduction to Statistical Thermodynamics. Application of the basic principles to the determination of properties of single and multicomponent systems. Physical models of atomic and molecular behavior (gas, liquid and solid states), and electric, magnetic and electromagnetic phenomena. Stability, phase transitions and critical points. Chemical reactions, structural changes and surface phenomena.	Includes Sustainability
DMS 448	Games, Gender and Society	Media Study	Addresses the different theoretical perspectives that view games and gaming as historical, social, cultural, aesthetic, technical, performative, and cognitive phenomenon. Examines how video games encompass an increasingly diverse set of practices, populations, and locations from fantasy football to multi-player medieval fantasy, from simulations of real life to alternate realities, from fanatics to activists, from nightclubs to competitive arenas to public streets to the classroom; from consoles to mobil phones, to large screen projections. Analyses not only popular games but interactive installations, pervasive	Includes Sustainability
MFC 118	Microcomputer Applications 1	Millard Fillmore College	Introduces the fundamentals of computers, emphasizing their day-to-day use and applications in the business presentation and environment. Class time covers concepts but is basically hands-on exercises using Microsoft Office 2010 (Word, Access, Excel and Power Point). Computer-based projects in a Windows environment form a significant portion of the student's grade.	Includes Sustainability
MFC 301	Introduction to Telecommunications	Millard Fillmore College	Surveys the discipline of telecommunications in today's deregulated environment for current or prospective managers of telephone and data communications systems. Topics include fundamental voice and data concepts, network design, customer premise equipment and central office equipment, modes of transmission, marketing and regulations issues, management of systems, and future directions. No prior technical background required.	Includes Sustainability
NSG 348	Evidence Based Practice and Nursing Research	Nursing	This course includes social and environmental aspects of sustainability. Foundations for evidence-based practice in nursing. Specific elements of evidence-based practice include formulating the clinical question, conducting a search strategy, critically appraising the evidence, and implementation of evidence in the clinical environment. Basic concepts of the research process will form the foundation for assessing the quality of evidence. Explores the relationship between evidence-based findings and nursing practice to achieve favorable and cost-containing client outcomes. Must be taken in program sequence.	Includes Sustainability

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NSG 393	Informatics and the Health Care Environment	Nursing	This course includes the social and environmental aspects of sustainability. Introduces students to the health care environment emphasizing the interface between the health care delivery system and informatics. Explores various environments where people obtain health care, including clinics, hospitals, and community settings. Students become familiar with health care terminology, government health policies, and the influence of managed care organizations on the health care environment.	Includes Sustainability
NSG 101	Explore the Profession of Nursing	Nursing	This course includes the social and environmental aspects of sustainability. NSG 101 is a one-credit hour seminar course which provides opportunities for intended nursing majors to explore concepts of the profession of nursing. Film media will be viewed and analyzed for representation of professional nursing values and concepts. Interviews with professional nurses will be used to explore roles, stressors, and comportment. The interactive classroom environment will engage the students in reflection and beginning assimilation into nursing. Together, these activities will provide a framework for success in the nursing major.	Includes Sustainability
NSG 475	Transitioning to Professional Nursing Practice as a Leader/Manager	Nursing	This course includes social and environmental aspects of sustainability. Prepares the baccalaureate nursing student for transition to professional nursing practice as a leader/manager. Discusses organizational structures and processes of health care organizations as context for professional nursing practice. Analyzes the collaborative roles of the nurse as leader and manager within the framework of legislative, economic, and regulated health care environments. Explores the legal and ethical parameters which influence the role of the nurse as leader/manager. A personal career plan is developed that incorporates strategies and processes for successful transition and practice.	Includes Sustainability
NBC 476	Transitioning to Practice as Baccalaureate Prepared Leader/Manager	Nursing	This course includes social and environmental aspects of sustainability. The purpose of this course is to prepare the RN student for transition to practice as a baccalaureate prepared leader/manager. Organizational structures and processes of health care organizations as context for professional nursing practice are discussed. The collaborative roles of the nurse as leader and manager within the framework of legislative, economic, and regulated health care environments are analyzed. The legal and ethical parameters which influence the role of the nurse as leader/manager are explored. Strategies and processes for successful RN transition as baccalaureate prepared nursing practice are discussed. A personal career plan for ongoing professional development and life-long learning is developed.	Includes Sustainability
NBC 494	Baccalaureate RN Leadership Synthesis Project	Nursing	This course includes social and environmental aspects of sustainability. This course is designed specifically for the registered nurse student completing the baccalaureate nursing program and focuses on nursing leadership in professional nursing practice. The student will integrate concepts of collaboration, safety, quality, leadership and management, patient-centered care, advocacy, ethics, legal implications, environmental and regulatory processes in the design and implementation of a nursing unit based synthesis project.	Includes Sustainability
NBS 378	Health Promotion and Disease Prevention within Pop	Nursing	This course includes the social and environmental aspects of sustainability. The Traditional Baccalaureate in Nursing Program consists of a robust curriculum, encompassing biomedical and social sciences, clinical nursing, and university general education courses to ensure our students have the professional education and broad skills necessary to assume a range of nursing positions.	Includes Sustainability
NSG 410	Public Health Nursing for Population Health	Nursing	This course includes social and environmental aspects of sustainability. The Traditional Baccalaureate in Nursing Program consists of a robust curriculum, encompassing biomedical and social sciences, clinical nursing, and university general education courses to ensure our students have the professional education and broad skills necessary to assume a range of nursing positions.	Includes Sustainability
PMY 455	Toxicology Fundamentals	Pharmacology and Toxicology	This course includes social and environmental aspects of sustainability. Introduces students to the basic principles of toxicology. Toxicology is defined as the study of adverse effects of natural compounds or manmade chemicals on living organisms. Specific areas covered will include: the history of toxicology, general principles, chemical carcinogenesis, specific organ toxicology and ways to determine the risk to humans associated with toxic compounds. Uses innovative approaches to teach toxicology by utilizing real life examples and historical information of mass poisonings from natural or environmental disasters. Introduces the student to general principles and practices of toxicology.	Includes Sustainability
PHI 234	Environmental Ethics	Philosophy	Examination of how humans should interact with the environment, both as individuals and as members of groups or organizations.	Includes Sustainability
PHI 335	Contemp Ethical Theory	Philosophy	Examines attempts in moral philosophy to find a justification for the basic ethical principles; also considers conception of an ethics based on natural law.	Includes Sustainability
PHI 237	Soc & Eth Values in Med	Philosophy	Examines current ethical positions and their application to ethical and social questions in medicine.	Includes Sustainability



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PHY 122	Descriptive Astronomy II	Physics	A continuation of PHY 121. Covers the Milky Way galaxy, other galaxies in the universe, cosmology and the origin of the universe, the formation of the solar system, earthlike planets, planets of the outer solar system, meteorites, asteroids, and comets. Course themes concentrate on origins: How did the universe begin? What was the origin of the earth? How did life begin?	Includes Sustainability
PHY 121	Descriptive Astronomy I	Physics	Introduces astronomy, astronomical instrumentation, the birth and evolution of stars, black holes, constellations and the night sky, covering scales in the universe, the history of astronomy from ancient times to the present, neutron stars, spectroscopy, and white dwarfs.	Includes Sustainability
PGY 300	Human Physiology	Physiology	Functions of the human body; interrelationships of the organ systems as humans respond and adapt to their environment.	Includes Sustainability
PSC 470	Legal Political Theory	Political Science	Considers the structure of laws in general, the question of sanctions, and the relation of justice to law.	Includes Sustainability
PSC 345	Canadian Politics	Political Science	Explores the politics and government of America's largest trading partner and neighbor to the north. Gives primary attention to Canadian politics and institutions, but also makes some comparisons with the United States.	Includes Sustainability
PSC 101	Intro American Politics	Political Science	Explores the theory and practice of the American political system; the three government branches, federalism, political parties, groups in the electoral and governmental process, public policy making, and contemporary political problems. This course is a controlled enrollment (impacted) course. Students who have previously attempted the course and received a grade other than W may repeat the course in the summer or winter; or only in the fall or spring semester with a petition to the College of Arts and Sciences Deans' Office.	Includes Sustainability
PSC 102	Intro Internat Politics	Political Science	Introduces contemporary and historical international relations; also examines nationalism, imperialism, power diplomacy, and ideological conflict.	Includes Sustainability
PSC 103	Intro to Comparative Politics	Political Science	Introduces foreign political systems; explores significant political similarities and differences among countries.	Includes Sustainability
PSC 333	Internat Relations Theory	Political Science	Introduces international relations theory, including the nature of the international system, alliances, nuclear strategy, negotiation, and decision making within governments.	Includes Sustainability
PSC 222	Politics & Society	Political Science	Introduces students to classic and contemporary issues and readings in political sociology, centering on the relationship of social and political forces. Draws empirical illustrations and cases from American and other "advanced industrial" societies.	Includes Sustainability
PSC 317	Environmental Politics	Political Science	Present ecological crisis; adaptations which society must make in its political system to deal with resulting problems.	Includes Sustainability
PSC 500	Intro Political Inquiry	Political Science	political inquiry. It is designed to help students to develop an appreciation of the diverse forms of knowledge collected under the rubric of political science. It is also designed to enable students to develop both analytic and critical skills regarding those various forms of knowledge. In studying the development of political science, this course will examine some important issues such as contemporary philosophy of science, the scientific method, necessary and sufficient conditions, scientific revolutions, law, cause, explanation and prediction, theories and models, and values in political inquiry. The course will also examine	Includes Sustainability
PSC 305	Judicial Politics	Political Science	This course examines the distinguishing characteristics of the legal process. It treats the adversarial system, the nature of law, the character of legal reasoning, the system of precedent, law school education, judicial policy-making, and the limits and nature of judicial power. It seeks to examine the unique characteristics of the judicial process, contrast those characteristics with those found in the legislative and executive processes, and explores how the process of judicial decision-making influences what courts do and the power they wield.	Includes Sustainability

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PSC 343	The Politics of Domestic Unrest	Political Science	revolution have become the primary forms of mass organized violence in the international system. We will therefore seek to understand why these events occur, what consequences are wrought by them, and how the international community may respond in terms of conflict resolution. The approach will focus on explaining the onset of civil wars by focusing on the characteristics of countries that tend to be vulnerable to civil unrest. In addition, the course will provide a theoretical understanding for why civil wars last as long as they do and the means by which civil wars end. Furthermore, we will explore	Includes Sustainability
PSC 215	Law & Political Process	Political Science	This course provides an introduction to the American legal system. A primary focus is the connection between law and politics. To that end, it examines the nature of judging and judicial decision-making, the organization of the state and federal legal systems, judicial selection, the power and role of the Supreme Court, and the relationship between the courts and the other two branches of government.	Includes Sustainability
PSC 505	American Politics	Political Science	on what I see as some of the more interesting questions that have occupied the attentions of scholars in the field for generations. Some "pro-seminars" of this nature march through the classic works in American politics, moving systematically through a greatest hits collection of books and articles on topics ranging from democratic theory and American political institutions to political behavior and organizations. Such classes are, in essence, introductory courses on American politics that have taken a few vitamins and packed on the muscle. Other seminars of this nature cover a few topics or current debates in the	Includes Sustainability
PSY 341	Cognitive Psychology	Psychology	Information-processing approach to human behavior; how people interpret and understand the environment; recognition; memory; language.	Includes Sustainability
RSC 610	Rehabilitation Environments	Rehabilitaiton Sciences	This course examines the role of prosthetics, orthotics, and augmentative communication devices, and the physical and social environment in supporting/inhibiting the rehabilitation process in hospital, rehabilitation center, outpatient, home, school, and community settings.	Includes Sustainability
RSC 514	Societal Impact	Rehabilitation Sciences	This course emphasizes how social policy may facilitate or restrict fulfillment of roles associated with full participation in society.	Includes Sustainability
SPM 501	Epidemiology Principles	Social & preventative medicine	be devoted to over viewing fundamental epidemiologic methods used in public health research and practice. The student will be familiarized with basic measures used in describing disease frequency in populations. Descriptive and analytic approaches to the study of disease will be explored, and a perspective on the role of epidemiologic methods in health services planning and evaluation will be provided. Problem solving exercises will be used to provide students an opportunity to tabulate data and apply subject matter developed during 2 lectures and in reading assignments. At the end of the course students should	Includes Sustainability
SPM 513	Epi of Infec Diseases	Social & preventative medicine	diagnostic techniques. 2. Describe the fundamentals of the biological basis of infectious disease epidemiology, including the key triangle, transmission pathways, and host and environmental risk factors. 3. Appreciate the utility, approaches, and limitations of studying transmission dynamics. 4. Describe the principles of outbreak investigation and propose a rational approach to investigating hypothetical and ongoing outbreaks of infectious disease. Critically review previous outbreak investigations and highlight strengths and weaknesses of such investigations. 5. Appreciate the importance of case definitions for	Includes Sustainability
SPM 551	Epi Appl to Environ Hlth	Social & preventative medicine	environmental health. Special study designs, biological response pathways, biomarkers, exposure assessment related to environmental research will be emphasized. The course will cover the five major environmental issues including air pollution, water pollution, heavy metals, environment hormones, radiation as well as contemporary and controversy issues in environmental epidemiology. Case studies will be used to illustrate the application of epidemiologic theory to understand the role of environmental factors in the etiology of disease	Includes Sustainability
SSC 317	Environmental Politics	Social Sciences Interdisciplinary	we attempt to answer the question of "how to get there from here." This involves developing a theory of social change by examining a number of case studies. We study local environmental controversies from a political perspective through firsthand involvement or guest speakers. We also look at national environmental conflicts, such as the backlash against mainstream environmentalism created by the "Wise Use" movement and contemporary political forces championing property rights and states' rights.	Sustainability Course
SSC 406	Law and the Environment	Social Sciences Interdisciplinary	Studies statutory and case law relating to pollution control, natural resources management, government regulation of land use, and the process and logic of decision making in governmental and legal institutions.	Sustainability Course
SSC 385	Energy, Environment, and Society	Social Sciences Interdisciplinary	Focuses on the relationship between energy use and the associated impact on the environment and society. Explores our dependence upon traditional energy resources such as oil, coal, nuclear and natural gas as well as renewable energy resources such as geothermal, wind, solar, etc. Examines solutions to the difficult process of changing current energy consumption trends.	Sustainability Course
SSC 118	Introduction to Environmental Studies	Social Sciences Interdisciplinary	Involves an interdisciplinary approach to environmental issues. Explores ecological concepts, human environment, air and water pollution, pesticides, solid waste handling, mineral and energy resources, the nuclear fuel cycle, population and food resources, and environmental control.	Sustainability Course

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SSC 442	Environmental Movements	Social Sciences Interdisciplinary	Provides a comprehensive analysis of the environmental movement in the United States. Rather than focusing on whether the protection of the environment is "right" or "wrong" the course critically examines the past, present and future of the environmental movement including Conservation, Preservation, Deep Ecology, Environmental Justice, Ecofeminism and Ecotheology. The course will examine the methods used by grassroots, environmental organizations. Throughout the course what is discussed will be applied to several local environmental concerns.	Sustainability Course
SSC 326	Great Lakes Ecology	Social Sciences Interdisciplinary	recreational opportunities to millions who live around their shores. This class provides an understanding of the Great Lakes, from their formation to the important role they play in the political and ecological systems of North America. Focuses on historical and ecological aspects, as well as current political and policy issues surrounding the Great Lakes-St. Lawrence ecosystem. Students learn about the geology, biota, ecology, management, and social and political aspects of the Great Lakes, especially the lower lakes (Erie and Ontario). The course uses a multi-faceted ecosystem approach to diverse topics involved with	Sustainability Course
SSC 343	Violence and the Family	Social Sciences Interdisciplinary	Addresses issues in violence and violence prevention with sections on theoretical definitions and historical context. Topics include the social context of violent behavior in families, child abuse and neglect, abusive parenting, violence against women, abuse of the elderly, violence in communities of color, and the media's influence on the development of antisocial behavior. Explores special problems of child protection services and the justice system's approach toward domestic violence.	Includes Sustainability
SSC 419	Wilderness	Social Sciences Interdisciplinary	Focuses on wilderness and biocentrism. Explores the idea of wilderness along three pathways. Part 1 deals with the history of biological wilderness and philosophical wilderness from Spinoza to Leopold to Snyder. Part 2 covers biological and other wilderness qualities. Part 3 examines the social movements related to wilderness and biocentrism. Also explores environmental ethics and morals. Investigates proposals for wilderness restoration, preservation, and expansion. A close examination of indigenous cultures' wilderness beliefs accompanies our study.	Includes Sustainability
SSC 217	Environmental Chemistry: Principles and Applications	Social Sciences Interdisciplinary	For Social Sciences Interdisciplinary Environmental Science students; designed to show how chemistry is involved in the identification, analysis, and solution of a large array of environmental problems. Relates basic chemistry to the atmosphere, the ozone layer, global warming, greenhouse gasses, energy production and emissions, water quality and pollution, acid precipitation, nuclear power and waste, nutrition, hydrology, and hazardous wastes.	Includes Sustainability
SSC 448	Animals, Zoos, and Ecology	Social Sciences Interdisciplinary	Introduces the study of animal behavior. Explores natural behaviors and the factors affecting those behaviors by covering such topics as the evolution of behavior, the nervous and endocrine systems, biological rhythms, social systems, reproductive behavior, and more. Course participants examine and understand animal behavior through lectures, readings, short projects, and direct observation of the animal populations on zoo grounds.	Includes Sustainability
SSC 414	Grant Writing for Non-Profits	Social Sciences Interdisciplinary	development of grant-writing strategies, and how to research and create grant proposals in a competitive market. Extensive proposal writing and composition. Integrated with current, ongoing internships if students simultaneously pursue a practicum in Health and Human Service (SSC 496) or and Environmental Internship (SSC 496). Students not pursuing a practicum or internship will adopt and research a non-profit organization appropriate to their field of study.	Includes Sustainability
SSC 103	Introduction to Health and Human Services	Social Sciences Interdisciplinary	Studies the health and human service system in the United States and locally, as it has been affected by history, changing values, and changes in the economic and political environment. Particularly emphasizes the gerontological, childhood, and community mental health service systems.	Includes Sustainability
SSC 238	Science, Religion, and Nature	Social Sciences Interdisciplinary	This environmental philosophy course explores the impact of religious traditions and modern science upon our perceptions of nature and how these perceptions ultimately determine our relationship with one another and the world in which we live. Specific areas of focus include nature attunement/magic, mythology, western mysticism, eastern religions, shamanistic traditions, Gaia theory and concepts of Spirit and nature.	Includes Sustainability
SSC 315	Field Ecology	Social Sciences Interdisciplinary	This is a field oriented course that explores the interrelationships of life with one another and their relationships with the environment that supports them. Classes are conducted both on and off campus and are focused in the areas of environmental analysis, conservation biology and general ecology. Specific class topics range from Wildlife Ecology, Botanical Surveys and Resource Management to varied Habitat Studies, Field Geology and Herbalism.	Includes Sustainability
SSC 441	Wildlife Management	Social Sciences Interdisciplinary	habitat management. This course serves as an introduction to wildlife ecology and management and focuses on the wildlife of North America. The course begins with a brief examination of the history of wildlife management and wildlife policy in North America. The majority of the class will focus on important wildlife species, wildlife ecology, population biology, and other subjects of importance to wildlife management. Special problems such as endangered species preservation, genetic diversity conservation, predator management, control of nuisance and alien species, and other non-game species will be covered. We	Includes Sustainability
SOC 387	Sociology of Race & Racism	Sociology	Can racism be solved with new laws and better attitudes, or is something deeper at stake? Is it possible to be colorblind? Students in this course explore such questions, learning how race and racism work in such arenas as politics, the economy, communities, law and the criminal justice system, education, pop culture, and intimate relationships and in relation to gender, class, and ethnicity. They will study racism as an institutional phenomenon that may or may not involve hate and outright discrimination.	Includes Sustainability
SOC 395	Global Sociology	Sociology	Global events change our world: international terrorism, climate change, global financial crises, consumerism, environmental emergencies, and popular uprisings in authoritarian countries influence events far beyond national boundaries. In this course we use sociological concepts and categories to better understand processes and experiences that are global in scope and implication.	Includes Sustainability

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SOC 315	Sociology of City Life	Sociology	Have you ever noticed the striking differences between rich and poor city neighborhoods? Have you ever looked for a job in a city and found only advertisements for waiting tables? This course explores everyday city life in the U.S. and the social structural conditions that shape it. Topics may include: deindustrialization, economic decline, and segregation; gentrification and the service economy; and, globalization and/or political activism. Students learn about the day-to-day realities of living, working, and having fun in a city, all within the broader social context of inequality, history, and the economy.	Includes Sustainability
SOC 341	Environment & Society	Sociology	sociologists study to understand the relationship between society and the environment: the social construction of nature, the political economy of environmental problems, environmental inequalities, science and risk, and environmental policy. By learning a sociological perspective on the environment, students learn how peoples cultures inform their views and behavior regarding issues such as bottled water, tuna fishing, and coal mining. Ultimately, students can understand environmental issues more clearly and can devise more thoughtful, more effective strategies to address those issues.	Includes Sustainability
SOC 562	Sociology of Law	Sociology	Major theorists and selected problem areas are examined. Course includes examination of dispute process, deviance and social control, administrative and regulatory institutions, the legal profession and comparative legal systems.	Includes Sustainability
SOC 348	Urban Sociology	Sociology	Scholars from a variety of disciplines study cities, suburbs, and metropolises, among other spatial phenomena. In this course we will explore their ideas taking a sociological approach to urban trends and city life more specifically. We will discuss sociological theories and research about the development and consequences of cities and city life, the spatial patterns of metropolitan areas, and the sources of inequality in urban areas in addition to many other topics.	Includes Sustainability
SOC 342	Soc Group in Urban Space	Sociology	This course focuses on how urban space affects forms of interaction among various social groups and, in turn, how social groups shape the production and consumption of the built environment. The course examines how spatial organization shapes and is shaped by the behaviors, life course, opportunity structures, and collective actions of different gender, sexual, class, religious, ethnic, and racial groups in the contemporary city.	Includes Sustainability
SOC 329	Population Problems	Sociology	This course introduces concepts from demography and population research. Students will learn demographic theories and methods and topics such as the demographic transition of populations; population processes such as fertility, mortality, and migration; the impact of population change on social institutions; and the regional, national, and global effects of population growth.	Includes Sustainability
SOC 293	Social Research Methods	Sociology	This course is about using scientific rigor to examine the world around us. It requires re-evaluating everyday methods of gathering information and drawing conclusions and using theory, causal modeling, and carefully collected data to arrive at logical, complete, and better-supported explanations of events and social phenomena. Students will learn about and practice doing sociology. The skills developed provide the foundations necessary to conduct professional research and to become better consumers of information.	Includes Sustainability
SOC 211	Sociology of Diversity	Sociology	What does diversity mean in the contemporary United States? Under what conditions is diversity positive or negative? This course applies a sociological lens to the meaning and experience of diversity, paying particular attention to dimensions of difference such race, ethnicity, religion, class, (dis)ability, sexuality, and gender.	Includes Sustainability
TH 439	Studies in Design	Theatre	Intensive study of a particular movement, designer, problem, or area in theatrical design or technology.	Includes Sustainability
UE 150	Sustainability Academy Seminar	Undergraduate Academies	citizens are promoting sustainability, we would do well to get clear on what sustainability is, and how it might be implemented. This course will be focused on three related tasks in order to increase your understanding of sustainability as it applies to our region, UB, and you: (1) participation in an internship or related project or outreach activity. For those students not in a sustainability internship, this will involve a related activity which we will discuss the first week of class. (2) We will work through selected literature on sustainability related to student internships, outreach activities, interests, or contemporary debates.	Sustainability Course
UE 143	Engagement Academy Seminar II	Undergraduate Academies	introduce students to theoretical, conceptual, and ethical frameworks for assessing, intervening, and evaluating outcomes in communities. Students will explore what the roles and responsibilities of individual citizens as members and leaders of communities should be in the change process. In addition students will discuss and analyze public policy at the grassroots level, the relationship between funding and social change, communication and coalition-building, and leadership development.	Includes Sustainability
UE 145	Global Persp Academy II	Undergraduate Academies	The Global Perspectives Academy seminar is an opportunity to explore a wide range of contemporary societies and cultures and explore some of the major forces that are reshaping our world today. The seminar will help students to explore the many ways in which people, ideas, information, and opportunities are "on the move" in today's world; to enhance students understanding of what  globalization  means for different people and different cultures; and develop greater skills in critical thinking, research, writing, and presentation.	Includes Sustainability
UE 147	Research Exp Academy II	Undergraduate Academies	The Research Exploration seminar is designed to create foundational knowledge that will allow for further exploration focusing on the theme of the academy. The advanced seminar focuses on understanding discipline specific research and connects scholarly research to students' academic majors. By the conclusion of this course, students will be able to identify steps in the research process; Use standards of the field to gather information; Use standards of the field to evaluate information; and Contribute to a class research project.	Includes Sustainability

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UE 140	Introductory Seminar	Undergraduate Academies	Perspectives. Students will have an opportunity to explore interesting topics through the perspective of all three academies. Faculty will rotate through the three sections of the course helping expose students to a wider range of perspectives. On a regular basis The Academies will offer academy-wide experiences to help students to integrate the various perspectives and to bond as a community. Through in and out of class experiences, students will develop an awareness of the three academy focus areas, begin to appreciate how further study in these areas might be applied to study of important contemporary	Includes Sustainability
UBE 101	University Experience	Undergraduate Education	Weekly seminar that assists first-year students in making the transition to the university. Through a small, interactive classroom environment intended to engage students in learning, we provide resources, foster important relationships, and help students understand their responsibilities and privileges within the university community. A faculty or staff member and an undergraduate peer mentor collaboratively teach the course. UB 101 is for first semester students only. Students who are not in their first semester will be deregistered from the course. The repeat policy does not apply to this course.	Includes Sustainability
URP 505	Urban Plannng & Env Change	Urban & Regional Planning	The approach is based on the "Conservation Action Planning" methodology for identifying ecological attributes and assessing their health so that effective conservation strategies can be developed and implemented. The focus is on protecting and restoring water quality, ecological function and wildlife habitat. We will use a variety of assessment tools to evaluate existing conditions as well as the effects of potential stressors like climate change, sprawl, energy demand, and invasive species.	Sustainability Course
URP 525	Financing Urban Developmnt	Urban & Regional Planning	Procedural aspects of development, including requests for proposals, methods of finance, project feasibility analysis, program evaluation and review, and government incentives.	Includes Sustainability
URP 605	Built Environment and Health	Urban & Regional Planning	attractive places for present and future generations yet is rarely explicitly addressed in traditional planning practice. A growing body of evidence suggests that social and environmental determinants--shaped by planning--play a key role in public health outcomes, especially in the recent increase in chronic disease in the United States. This graduate seminar is about exploring the possibilities, limits, and challenges of planning and designing communities to promote public health.	Includes Sustainability
URP 565	Understanding Good Urban Form	Urban & Regional Planning	be an introduction to urban design, the course is open to students who are interested in neighborhoods, cities, and larger metropolitan regions. Investigates the question of urbanism in general, and how the urban designer could be effective in improving the quality of life of cities through facilitating urban reinvestment and encouraging urban sustainability. By improving visual and physical quality of the built environment, urban design attempts all to make neighborhoods and cities beautiful, livable, as well as socioeconomically and culturally stronger.	Includes Sustainability
URP 566	Urban Design: Built Environment Case Studies	Urban & Regional Planning	and what does it mean? What are the relations between density and sustainability? This graduate seminar is intended to examine density as a most profound indicator of human settlement pattern especially in urbanized areas. One of hypotheses that the class addresses is this: Is denser the city, the greener it is or is it? Through the use of provocative readings and comparative analysis and mapping techniques, we compare major cities around the world to understand the relation between urban density and urbanism, its economic and environmental robustness: placemaking, good urban form and great streets -- all	Includes Sustainability
URP 501	Evolution of Urban Struct	Urban & Regional Planning	This course focuses on the spatial structure and function of cities and regions and the roles that urban planners play in analyzing and shaping cities and regions. The objective is to reach a critical understanding of the cultural and historical processes and planning actions and policies that have influenced cities and regions. Students will gain both a theoretical and practical understanding of urban planning processes as we explore problems and challenges currently facing communities in Western New York, the United States, and the world. Prerequisite: graduate standing.	Includes Sustainability
URP 508	Race, Class and Gender	Urban & Regional Planning	This course explores the intersectionality of race, class and gender in the context of U.S. racism and the neoliberal project. It views the duality of race and racism as social constructions, which are intertwined with the American class hierarchy. At its core, URP 508 is concerned with the role played by race, class and gender in shaping the urban metropolis and in determining what urban planners can do to build a metropolis based on social and racial justice.	Includes Sustainability
URP 510	Plng Concepts & Controver	Urban & Regional Planning	toward becoming reflective practitioners: ones who can deliberate about the justifications, decision-making concepts, and ethical principles that drive our work. Our specific learning aims are: ☐ To understand justification of planning in societies based on markets ☐ To learn alternative approaches to planning, such as the following: o Classical comprehensive o Means-ends rationalist o Incrementalist o Advocacy and opposition o Negotiated planning ☐ To gain experience in distinguishing better and worse planning arguments ☐ To acquire introductory concepts in planning ethi	Includes Sustainability
URP 559	Tourism Policy & Planning	Urban & Regional Planning	and cultural domains. Communities from Western New York to the South Pacific are staking their future on tourism. o The aim of the course is to explore how careful tourism and recreation planning can enhance the social and economic well-being of communities. Theory, disciplinary perspectives, case studies, and travel media will examine a variety of specific tourism and recreation products. o We will cover general issues of tourism and development planning early in the semester; these include global trends (international travel and destinations); macro-economic impacts (the role of tourism in regional	Includes Sustainability
URP 567	Planning Law	Urban & Regional Planning	In this course we will discuss the role of law in land use planning and community development, and limitations on the power of government to regulate land use. Topics include the police power, property rights, eminent domain, regulatory takings, zoning and other forms of government regulation, constitutional restrictions on land use regulation, and environmental protection. Contemporary issues will be added to the basic curriculum as the opportunity arises. We will often use open discussion as a means to reach sustainable conclusions concerning land use policy issues and conflicts	Includes Sustainability
URP 573	Land Use & Physical Plng	Urban & Regional Planning	This course will survey the evolution of physical planning as a professional field, and will introduce key theories and debates relevant to land use, the planning process, physical planning, planning law, zoning, location analysis, environmental science, and planmaking. This course teaches the professional skills needed to create and implement land use plans and find employment as a land use planner. This course teaches skills that every professional planner is expected to have. This is a required course in the MUP degree program.	Includes Sustainability

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URP 578	Envir Plng Meth	Urban & Regional Planning	studies a different method. There is an assigned reading about the method and how this method is used in a specific local project. Most weeks there will be a field trip to the specific local project related to the method being studied. A local environmental professional will lead the field trip and explain how the team planned and used the method to remediate an environmental problem. Some of the topics include: Environmental Impact Assessment, Wildlife and Biodiversity Planning, Community Gardens, Open Space Planning, Contaminated Brownfields Remediation and Redevelopment, Stream Restoration,	Includes Sustainability
VS 375	Science Culture Media	Visual Studies	Introduces critical issues in science, culture, and emerging media-especially as they pertain to contemporary artistic practice. Topics are addressed through artists' works; selected readings include historical trends, biotechnology, virtuality, net theory, and cultural resistance. Lab fee.	Includes Sustainability