Saint Louis University Sustainability Courses

Type	Dept	Course ID	Level	Title	Description
Includes sustainability	ACCT	ACCT614	GR	Sem in Acct and Society	Accounting in society: past, present, and future, with emphasis on areas of increasing social importance. Topics include the historical significance of accounting, socioeconomic accounting, corporate social accounting, social audits, role of the professional accountant in accounting for social performance, cost-benefit analysis, environmental accounting, and accounting for human resources.
Sustainability course	BIOL	BIOL109	UG	Biodiversity & Conservation	Introduction to aspects of conservation of natural and managed ecosystems, as well as human environments. Foundations and applications of genetics and ecology of populations. Population growth and demographics, with special emphasis on human population and the implication on the sustainable use and management of resources and ecosystems. A continuation of BIOL-104 for Conservation Biology students.
Includes sustainability	BIOL	BIOL114	UG	Our Living Environment	Environmental problems treated within a framework of fundamental ecological principles. For non-science majors. Satisfies Arts and Sciences Core Science requirement.
Includes sustainability	BIOL	BIOL120	UG	Ecological Issues and Society	This SLU Inquiry course provides scientific insights into a variety of popular press topics and everyday decisions about ecological issues. Topics include population harvesting, lawn and garden decisions, and global warming. For non-science majors. Satisfies Arts and Sciences Core requirement.
Includes sustainability	BIOL	BIOL134	UG	Diversity of Life	This SLU Inquiry course will provide an overview of the diversity of life on Earth, as well as the diversity of the human species. Important local, national, and international issues and policies related to biodiversity and conservation will be discussed. For non-science majors. Satisfies Arts and Sciences Core Science requirement.
Includes sustainability	BIOL	BIOL150	UG	Plants and People	This SLU Inquiry course will give students an appreciation of the importance of plants in human society. An overview of plant form and function, investigates economic and social aspects of plants, and cultural aspects of human plant use. For non-science majors. Satisfies Arts and Sciences Core Science requirement.
Includes sustainability	BIOL	BIOL170	UG	Plants and Cultural Diversity	An introduction to economic botany and ethnobotany through the uses of plants in medicine, nutrition, religion, and recreation in different cultures, including a minimum of three field trips to the Missouri Botanical Garden. For non-science majors. Satisfies the Arts and Sciences Cultural Diversity and the Science Core requirement.
Includes sustainability	BIOL	BIOL328	UG	Ethnobotany	A modern synthesis of plant biology and the principles of cultural anthropology to compare the use of domesticated and wild plants. A comparison of tropical and temperate zone 'cases' requires four field trips to the Missouri Botanical Garden. Satisfies the Arts and Sciences Cultural Diversity requirement.
Includes sustainability	BIOL	BIOL340	UG	General Ecology	Lecture three hours, laboratory three hours per week. An introduction to the science of ecology: study of general theories, models, and problems in population, community, and ecosystem levels.
Includes sustainability	BIOL	BIOL345	UG	Economic Botany	Overview of plant form and function, followed by investigations into economic and social aspects of plants, including origin of important crops and health impacts. Learn how foods and spices drove world exploration, and develop your ability to critically assess modern agricultural practices, including ethics of bioprospecting and genetically modified foods. Satisfies upper-division plant biology requirement. Prerequisites: BIOL-106
Includes sustainability	BIOL	BIOL349	UG	Plant Physiology	Principles of plant physiology: growth, phytohormones, flowering, photosynthesis, water relations, mineral nutrition, translocation in higher plants.
Includes sustainability	BIOL	BIOL350	UG	Biodiversity of Africa I	Lecture three hours per week. An introduction to the biodiversity of the tropical rainforest of equatorial Africa and the role this biodiversity plays in the culture of the native peoples of Gabon and Cameroon.
Includes sustainability	BIOL	BIOL351	UG	Biodiversity of Africa II:FLDT	A field trip to study the biodiversity of the tropical rainforest and the role this biodiversity plays in the culture of the native peoples of Gabon and Cameroon. Satisfies the Arts and Sciences Cultural Diversity requirement.
Includes sustainability	BIOL	BIOL406	UG	Structure/Function Ecosystems	Principles of ecology developed through an understanding of the nature and properties of ecosystems. Principles of ecology developed through an understanding of the nature and properties of ecosystems.
Includes sustainability	BIOL	BIOL409	UG	Plant Ecology	Principles of plant autecology and synecology. The nature and properties of plant communities - structure, development, and distribution. The interaction of the individual plant with its environment. Principles of plant autecology and synecology. The nature and properties of plant communities - structure, development, and distribution. The interaction of the individual plant with its environment.
Includes sustainability	BIOL	BIOL412	UG	Field Botany	This field-based course introduces students to the diversity of plant communities in the Ozark Mountain region of Missouri and to the tools scientists use to quantify that diversity. Class and laboratory activities will be conducted at Reis Biological Field Station and at nearby parks and natural areas. Prerequisite: BIOL-106.
Includes sustainability	BIOL	BIOL413	UG	Field Mammalogy	This course examines the evolution, physiology, ecology and behavior of mammals. Emphasis on field identification and field methods used to study the behavior and ecology of mammals. The course is taught at the Reis Biological Field station. Students cannot receive credit for this course and Biology of Mammals (BIOL 438). Prerequisite: BIOL 106.
Includes sustainability	BIOL	BIOL414	UG	Field Ornithology	This course examines the evolution, physiology, ecology and behavior of birds. Emphasis on field identification and field methods used to study bird behavior and ecology. The course is taught at the Reis Biological Field station. Students cannot receive credit for this course and Biology of Birds (BIOL 431). Prerequisite: BIOL 106.
Includes sustainability	BIOL	BIOL420	UG	Aquatic Ecology	Lecture three hours, laboratory three hours per week. An exploration of freshwater ecosystems in Missouri including springs, rivers, and lakes. The course will explore the diversity of living organisms, both animals and plants, found in these ecosystems. A major goal will be to understand how the physical and chemical properties of water affect the abundance and diversity of aquatic organisms. Week-end field trips are required. This course is also taught during the summer at the Reis Field Station.
Includes sustainability	BIOL	BIOL422	UG	Aquatic Biology Fieldtrip	A companion course to BIOL 420 (Aquatic Ecology). Explores the diversity of lakes of Western North America through a one-month fieldtrip. Ten lakes from California to the Northwest Territories, Canada will be compared in terms of physical properities, water chemistry and biotic diversity.
Includes sustainability	BIOL	BIOL426	UG	Biology of Amphibians/Reptiles	Lecture three hours, laboratory four hours per week. This course is a survey of the diversity, natural history, evolution, and biology of amphibians and reptiles. Week-end field trips are required. Lecture three hours, laboratory four hours per week. This course is a survey of the diversity, natural history, evolution, and biology of amphibians and reptiles. Week-end field trips are required.
Includes sustainability	BIOL	BIOL428	UG	Biology of Fishes	Lecture three hours, laboratory three hours per week. Introduction of the study of fishes: systematics, ecology, behavior, evolution, and the economic importance of freshwater and marine fishes. Laboratory acquaints students with 80 of the 400 fish families. Week-end field trips are required to study the Missouri fish fauna.
Includes sustainability	BIOL	BIOL440	UG	Applied Ecology	This course will concentrate on the identification and possible solutions of ecological problems faced by managers today. Introduction to general methods of ecological risk assessment. Special emphasis on sustainable use of land, marine, and aquatic resources. This course will concentrate on the identification and possible solutions of ecological problems faced by managers today. Introduction to general methods of ecological risk assessment. Special emphasis on sustainable use of land, marine, and aquatic resources.
Includes sustainability	BIOL	BIOL445	UG	Ecological Risk Assessment	This course will review the federal laws pertaining to environmental protection, including NEPA, RCRA, CERCLA, and the Clean Water and Clean Air Acts. The course will also examine the sources of risk for ecological entities and discuss how to determine and manage those risks. The main focus will be on risk determination and management of wild populations, ecosystems, and landscapes.
Includes sustainability	BIOL	BIOL448	UG	Conservation Biology	Fundamental principles of biodiversity maintenance through the managment of ecosystems and populations. This course will examine conservation at the level of species, population, and ecosystems. Fundamental principles of biodiversity maintenance through the managment of ecosystems and populations. This course will examine conservation at the level of species, population, and ecosystems.
Sustainability course	BIOL	BIOL468	UG	Landscape Ecology	This course will concentrate on the ecology and management of landscapes. Topics will include formation of spatial patterns, flux of materials and organisms across space, and natural and human-mediated disturbance; as well as the relevance of scale in identifying patterns and how it relates to management decisions. Case studies with relevance to state and federal lands will be covered. This course will concentrate on the ecology and management of landscapes. Topics will include formation of spatial patterns, flux of materials and organisms across space, and natural and human-mediated disturbance; as well as the relevance of scale in identifying patterns and how it relates to management decisions. Case studies with relevance to state and federal lands will be covered.
Includes sustainability	BIOL	BIOL475	UG	General Ecology	Lecture three hours, laboratory three hours per week. An introduction to the science of ecology: study of general theories, models, and problems in population, community, and ecosystem levels.
Includes sustainability	BIOL	BIOL480	UG	Internship in Conservation	Students will work with professional conservation/environmental biologists to get practical experience. Students may work with conservation biologists associated with the EPA, Missouri Conservation Department, Corps of Engineers, or private environmental consulting firms. Environmental problems treated within the framework of fundamental ecological principles.
Includes sustainability	BIOL	BIOL545	GR	Biogeography	A discussion of the major distribution patterns of plants and animals and the mechanisms responsible for these patterns. Offered every other Fall semester.

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Includes sustainability	BIOL	BIOL548	GR	Conservation Biology	Fundamental principles of biodiversity maintenance through the management of ecosystems and populations are explored. Begins with the philosophical underpinnings of the conservation movement as developed in the writings of Leopold and moves on to extensive treatment of modern conservation practices directed toward preservation of imperiled systems. Offered every other year.
Includes sustainability	BIOL	BIOL550	GR	Problems in Ecology	Independent laboratory or field study on a specific problem in ecology. Offered occasionally.
Includes sustainability	BIOL	BIOL555	GR	Advanced Ecology	An in-depth treatment of the relationships between organisms and their environment via lecure, discussion and seminar formats plus occasional laboratory and field exercises. Offered occasionally. An in-depth treatment of the relationships between organisms and their environment via lecure, discussion and seminar formats plus occasional laboratory and field exercises. Offered occasionally.
Includes sustainability	CHEM	CHEM100	UG	Chemistry and the Environment	This course presents an introduction to the basic principles of chemistry and how these impact important environmental issues. Topics include critical issues in energy use and sustainability, elemental cycles in the environment, atmospheric chemistry and pollution, the hydrosphere and water pollution, and the biosphere and persistent organic compounds.
Includes sustainability	CHEM	CHEM521	GR	Environmental Chemistry	Concerns the impact of human activities on our natural surroundings. Course will focus on the chemical processes which occur in the atmosphere and in bodies of water and the effect of release of chemical pollutants on these systems. Sources of pollutants will be identified, and their removal from aqueous and atmospheric systems will be discussed. Health hazards to humans of selected pollutants will be covered to a limited extent.
Includes sustainability	CHEM	CHEM621	GR	Environmental Chemistry	Concerns the impact of human activities on our natural surroundings. Course will focus on the chemical processes which occur in the atmosphere and in bodies of water and the effect of release of chemical pollutants on these systems. Sources of pollutants will be identified, and their removal from aqueous and atmospheric systems will be discussed. Health hazards to humans of selected pollutants will be covered to a limited extent.
Sustainability course	CVNG	CVNG203	UG	Sustainability & Environ Engr	Course provides an overview of sustainability and environmental engineering principles. Topics include: population, environmental impact, and resource depletion; environmental laws; biodiversity and ecosystem functioning; climate change, air pollution, and ozone depletion; solid-waste management, hazardous and nuclear waste management; water resource and pollution management; and water and wastewater treatment and systems. Prerequisite: CHEM 163 or CHEM 151. Offered every fall semester.
Sustainability course	CVNG	CVNG204	UG	Sustain & Environ Engr Lab	Course provides an overview of environmental testing methods, including dissolved oxygen, BOD, pH and alkalinity, conductivity, plate counts, and turbidity. Prerequisite: CHEM 165. Co-requisite: CVNG 203. Offered every fall semester.
Includes sustainability	CVNG	CVNG293	UG	Sustainability of Built Systms	No description listed in Banner
Includes sustainability	CVNG	CVNG303	UG	Civil Engineering Materials	Introduction to the characteristic properties and the fundamental behavior of the materials used by civil engineers with emphasis on concrete, steel, masonry, wood, and asphalt. Laboratory experiments and testing is used to give knowledgeable perception of the behavior when materials are subjected to various loads. Prerequisite: ESCI 310/311. Offered every fall semester.
Sustainability course	CVNG	CVNG419/519	UG	Sustainable Land Development Engineering	Introduction to land development engineering and urban planning; site design and sediment control; transportation planning and roadway design; water resource and waste disposal issues; ecological impact analysis' application sustainable development principles to land development projects at local and regional scales.
Sustainability course	CVNG	CVNG593	GR	Special Topics: Sustainable Water Management	Water management and alternative analysis considering water resource, legal, political, and ecological issues; determination and forecasting of water demand; supply and estimating drought impacts resulting from cyclic and permanent shifts in the climate.
Sustainability course	DIET	DIET303	UG	Sustainable Food Systems	This course provides students with a clear perspective on the principles, history, and practices of sustainable food systems in local and global communities.
Includes sustainability	DIET	DIET480	UG	Sustainable Fd Innovation Ext	Sustainable food field-based course
Sustainability course	DIET	DIET503	GR	Sustainable Food Systems	This course provides students with a clear perspective on the principles, history, and practices of sustainable food systems in local and global communities. This course provides students with a clear perspective on the principles, history, and practices of sustainable food systems in local and global communities.
Sustainability course	DIET	DIET590	GR	Culinary Practicum	Practical entrepreneurial experience or research in culinary arts and nutrition under professional supervision with a focus on sustainability. (20 hours per week).
Sustainability course	DSCI	DSCI360	UG	Sustainabl Glbl Sply Chain Mgt	The goal of this course is to make students aware of how goods and services are being produced and distributed in integrated environments around the globe within and between enterprises. Global supply chain management systems will be studied with the intent to reduce and/or eliminate duplicative processes and to ultimately improve enterprise performance. Topics will include the impact of supply chain management on the financial statements, global outsourcing and security issues in supply chain integration. Prerequisite: Junior standing.
Sustainability course	DSCI	DSCI370	UG	Sustainable Glbl Logistics Mgm	This course acquaints students with the theory and practice of determining the most efficient and effective methods for moving, storing and delivering goods and services globally. A special emphasis is placed on the roles of third-party logistics within supply chain contexts. Prerequisite: DSCI 305
Includes sustainability	DSCI	DSCI605	GR	Production and Operations Management	Designed to familiarize students with decision-making tools and models that are utilized by operational managers, to present business firm integrated operational practices in the manufacturing and service sectors, and to analyze and examine the business strategic planning process from a cross-functional perspective, utilizing case studies. Topics include: operations and supply-chain strategy, project management, strategic capacity management, job scheduling and control, logistics for facility location decisions, aggregate planning, and deterministic/stochastic inventory decisions. Pre-requisites: DSCI 501 and MBA 502.
Includes sustainability	DSCI	DSCI643	GR	Quality Improvement/Lean Sigma	This course is intended to serve as an in-depth examination of quality principles applied specifically to manufacturing, service and supply chain environments. Both managerial and statistical aspects will be covered.
Includes sustainability	DSCI	DSCI644	GR	Global Supply Chain Mgt Con.	The objective of Supply Chain Management Concepts is to introduce students to an integrated enterprise approach to business flow of goods and services from suppliers to the customers (procurement, operations management, inventory control, logistics and transportation, distribution and customer service). The term INTEGRATED process is emphasized in this course as opposed to SILO approach. As such, every topic in each area is being discussed in the context of integrated flow of goods and services from suppliers to customers and continuous flow of information from the customers to the suppliers. Pre-requisites: DSCI 501 and DSCI 605.
Includes sustainability	DSCI	DSCI645	GR	Comp Integ Global Supply Chains	The objectives of this course are: (1) To acquaint the student with characteristics of the flow of information and material along supply chains, (2) To expose the student to methods of integrating information technologies along supply chains, (3) To familiarize the student with the technologies used in coordinating intra- and inter-organizational activities, (4) To acquaint the student with the role of second generation WEB in the integration of global supply chains, and (5) To introduce the student to software used for intra- and inter-organizational coordination. Pre-requisite: DSCI 605.
Includes sustainability	DSCI	DSCI646	GR	Global Logistics Management	The objectives of this course are: (1) to acquaint the student with the use of logistics management theory and techniques for analyzing and controlling global manufacturing and operations management systems; (2) to expose the student to several of the most widely utilized models for supply chain management in the manufacturing and service sectors (financial, health care, public sectors, etc.), along with case studies; and (3) to familiarize the student with the use of computer software in facilitating logistics decisions. Pre-requisite: DSCI 605.
Includes sustainability	DSCI	DSCI648	GR	Strategy, Sourcing, and Procurement in Supply Chain Management	This course acquaints students with the use of purchasing and strategic sourcing concepts and techniques to optimize supply chain operations. Total cost of ownershiop will be the main guideline in making procurement and sourcing decisions.
Includes sustainability	DSCI	DSCI652	GR	Transportation and Warehouse Management	This course focuses on making strategic decisions regarding the selection of transportation modes and optimizing the size/location of warehousing and distribution centers. Students will learn how to utilize software to minimize transportation and warehousing costs. Site visits to transportation facilities will augment lectures.
Includes sustainability	DSCI	DSCI655	GR	Spec Topics Supply Chain Mgt	Students will learn about contemporary and emerging topics in logistics and supply chain management (SCM). Although specific topics may vary from term to term, but may include risk management, lean/six sigma in SCM, reverse/sustainable SCM, supply chain security and healthcare SCM.
Includes sustainability	EAS	EAS101	UG	Earth Systems I-The Solid Eart	This course covers the interactions between land, water, air, and life with special emphasis on humans and the environment. EAS-101 focuses on the solid earth and surface environments; EAS-103 focuses on the oceans and atmosphere. Either course can be taken independently. Satisfies Science Core requirement.
Includes sustainability	EAS	EAS102	UG	Earth's Environment I Lab	This course covers the interactions between land, water, air, and life with special emphasis on humans and the environment. EAS-101 focuses on the solid earth and surface environments; EAS-103 focuses on the oceans and atmosphere. Either course can be taken independently. Satisfies Science Core requirement.

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Type	Dept	Course ID	Level	Title	Description
Includes sustainability	EAS	EAS103	UG	Earth's Dynamic Environment II	This course covers the interactions between land, water, air, and life with special emphasis on humans and the environment. EAS-101 focuses on the solid earth and surface environments; EAS-103 focuses on the oceans and atmosphere. Either course can be taken independently. Satisfies Science Core requirement.
Includes sustainability	EAS	EAS104	UG	Earth's Environment II Lab	Two hour laboratory per week. Illustrates and supplements the material covered in lectures of EAS-103 Earth's Dynamic Environment II. Several short field trips are taken during the semester. Not required for students enrolled in EAS-103, though EAS-103 is a pre-requisite or co-requisite for the lab. x EAS105 Lecture three hours per week. Provides an introduction to ocean basin formation, chemical and physical properties of sea water, waves, currents, tidal forces and tides, interaction of land and ocean in coastal environments, marine biology and ocean resources. Fulfills three hours of science requirement. Spring semester, alternate years.
Includes sustainability	EAS	EAS105	UG	Introduction to Oceanography	Lecture three hours per week. Provides an introduction to ocean basin formation, chemical and physical properties of sea water, waves, currents, tidal forces and tides, interaction of land and ocean in coastal environments, marine biology and ocean resources. Fulfills three hours of science requirement. Spring semester, alternate years.
Includes sustainability	EAS	EAS107	UG	Understanding the Weather	Lecture three hours per week. A nonmathematical description of the processes that effect the weather are provided. Topics include solar radiation, horizontal and vertical structure of the atmosphere, atmospheric motions, and climate. Fulfills three hours of science requirement. Fall and Spring semesters.
Includes sustainability	EAS	EAS108	UG	Intro to Environmental Science	No description listed in the course catalog
Sustainability course	EAS	EAS109	UG	Climate Change	Introduction to climate change. Understand what is happening to the climate system, what evidence there is and what has happened in the past. We will study the reasons for the societal debate and evaluate proposals for international action on climate change. Lecture course, satisfies 3 hours of Science requirement and 3 hours of Global Citizenship requirement.
Includes sustainability	EAS	EAS114	UG	Earth History	Lecture three hours per week. Provides an introduction to the geologic origin and development of the earth; plant and animal inhabitants. Fulfills three hours of science requirement. Spring semester, alternate years.
Includes sustainability	EAS	EAS117	UG	Physical Geography	Lecture three hours per week. Provides an introduction to the origin of land forms, earth resources, climate and weather, implications of human use of natural resources. (Satisfies Missouri Teaching Certification Requirement.) Fulfills three hours of science requirement. Fall semester.
Includes sustainability	EAS	EAS118	UG	Physical Geography Lab	Two hour laboratory per week. Provides experience in using planimetric maps, topographic maps and nautical charts and an introduction to the underlying principles of map making and map reading. Fulfills 1 hour of science requirement. Usually offered in the Fall semester.
Includes sustainability	EAS	EAS130	UG	Seismology of Nuclear Explosio	This inquiry-based course will emphasize the scientific questions involved in the detection of underground nuclear explosions using seismology. Many other related issues will also be raised and discussed, e.g. the interplay of science and public policy, how political decisions are made, the ratification of Test Ban Treaties, and the difference between explosions and earthquakes. Class limit 19. Two lectures and a 2-hour lab per week. Offered once per year.
Sustainability course	EAS	EAS131	UG	Water-Our Precious Resource	This course is focused on freshwater, which is one " of most important and vulnerable resources on" " Earth. Availability of freshwater for human" consumption, animal husbandry, and crop irrigation " will become a major focus of national and" " international relations in the years to come. In" this course, we will be learning the basics about " freshwater resources, drinking-water and" " waste-water treatments, water-borne disease, water" pollution, river dynamics and flooding, land use " in flood plains, and national and international" " conflicts related to water resources. Each class" " session will be comprised of lecture (~2hours)," water laboratory simulation (~2hours), and field " trip (~3hours). Transportation is provided for" " the field trips. Fulfills 3 hours of science" requirement."
Includes sustainability	EAS	EAS132	UG	Natural Disasters	This inquiry-based course examines geologic processes that are sometimes hazardous to humans, including earthquakes, volcanic eruptions, and landslides. Each section of the course will include and analysis of the geologic processes, and will end by discussing specific examples of where, when and how each type of geologic process has proven hazardous, or resulted in a natural disaster. Lecture and discussion, 3 hours per week. Fulfills 3 hours of Science requirement.
Includes sustainability	EAS	EAS133	UG	Drifiting Continents	This inquiry-based course introduces students to the theory of continental drift and plate tectonics, covers the general character of science, the history behind plate tectonics, how the theory explains the gross features and phenomena near the Earth's surface, and current debates around plate tectonics. Lectures and discussion, 3 hours per week. Fulfills 3 hours of the science requirement.
Includes sustainability	EAS	EAS135	UG	Real Meteorology	Real observation-based meteorology will give non-science majors an appreciation of how meteorologists collect and use weather data to make forecasts. Students are expected to actively participate by analyzing meteorological data and by making and verifying at least one forecast. Fulfills 3 hours of science requirement.
Includes sustainability	EAS	EAS136	UG	Beauty of Atmosphere	The student understands the physical processes responsible for severe local storms, hurricanes, and winter storms. In addition to understanding the power behind these phenomena, the student marvels at the beauty of optical phenomena such as rainbows, halos, mirages, coronas and sundogs and inquiries about the mechanism. Fulfills 3 hours of science requirement.
Includes sustainability	EAS	EAS137	UG	Met. Aspects of Emer Response	Two 75 minute periods per week. The first period and 25 minutes of the second period will be devoted to lecture topics. The last 50 minutes of the second period will involve a case study. Field trips to the St. Louis Forecast Office of the National Weather Service and to an Emergency Operations Center are required. 75% of situations involving federal, state and local emergency responders and agencies are directly caused by weather phenomena. Some of these are obvious, such as tornadoes, hurricanes and flooding; while others, like a heat wave or extreme winter weather may not be obvious. In addition, conflagrations, chemical spills and releases, and air pollution incidents require weather information and forecasts.
Includes sustainability	EAS	EAS138	UG	Missouri Climate	This course is an in-depth look into the physical processes which affect the climate of Missouri. Students working in teams will use actual observations to examine the possible relationships between climate phenomena (i.e. El Nino, La Nina, Pacifica Decadal Oscillation, teleconnections, and global warming) and the weather patterns over Missouri. Fulfills three hours of science requirement. Fall semester.
Includes sustainability	EAS	EAS139	UG	Hurricanes and Typhoons	
Sustainability course	EAS	EAS140	UG	Energy Resource Sustain Future	Analysis of the emerging crisis in fossil fuels as the cheap energy source for the future. Is limitless petroleum, gas, or coal available, accessible, and at what cost? Are there miracle cures from fundamental physics, biology? How much energy can be supplied by solar, wind, and other sources?
Includes sustainability	EAS	EAS142	UG	Found of Atmospheric Science	This course provides an overview of atmospheric science for students majoring in meteorology. Topics include: atmospheric composition and structure, temperature, heat, moisture, air masses, fronts, midlatitude cyclones, thunderstorms, and hurricanes. Education and career opportunities will also be discussed. Co-requisite: MATH-141 or better, meteorology major, or permission of the instructor.
Sustainability course	EAS	EAS160	UG	Sustainable Energy	Scientific and economic impacts of the crisis in waning fossil fuels as the world's cheap energy source. Future petroleum, gas, and coal recovery will likely be either environmentally unacceptable or too costly. The challenges of supplying energy from solar, wind, and other renewable sources will be highlighted.
Includes sustainability	EAS	EAS193	UG	Introduction to Earthquakes	Lecture three hours per week. Provides an introduction to the science of earthquakes. Discussions include the general character of science, plate tectonics, geologic time, seismic hazards, faults and faulting, earthquake prediction, seismic waves, and Earth structure and composition. Fulfills three hours of science requirement. Fall semester.
Includes sustainability	EAS	EAS208	UG	Intro to Environmental Science	Lecture 3 hours per week. Examination of natrual and man-made environmental hazards, their causes and possible solutions. Fulfills three hours of science requirement. Fall semester.
Includes sustainability	EAS	EAS211	UG	Meterological Analysis	The analysis procedures and tools of meteorology are studied. Types and formats of meteorological data from both observations and models are examined. The analysis and display of data by hand and with computers are introduced. Prerequisites: MATH-142, EAS-253, or permission of the instructor. Must be taken concurrently with EAS-244.
Includes sustainability	EAS	EAS217	UG	GIS in Civil Engineering	This course discusses the fundamental concepts of GIS, the methods and software used to solve civil engineering problems. The course also covers skills to deal with remote sensing data, basic and differential GPS surveying to prepare students for today's growing business needs in civil engineering companies and government agencies. Students may only apply credits towards their graduation requirements from one of the following courses: EAS-217, BIOL-417, EAS-417, or SOC-465.
Includes sustainability	EAS	EAS220	UG	Mineralogy	Lecture three hours per week. Crystallography, physical, chemical, and descriptive mineralogy.
Includes sustainability	EAS	EAS221	UG	Mineralogy Lab	Identification of rock-forming and ore minerals through physical and optical properties. will include field trips. Meets 3 hours once a week.
Includes sustainability	EAS	EAS230	UG	Geology for Engineers	Engineering projects deal with surface materials and landforms on a daily basis. A proper understand of material properties and processes that lead to their formation is critical to understand their behavior. This course introduces students to the basic principles of earth science, the composition of earth materials and processes that shape the Earth and how these relate to human modifications.
Includes sustainability	EAS	EAS240	UG	Field Techniques in Geology	Instruction in the fundamental methods of field work. Students will learn to use a compass, maps and other geological aids, orienteer, describe basic geologic features, keep a field notebook and map simple geologic structures. Most of the course will be conducted in the field. Fall semester.

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Includes sustainability	EAS	EAS244	UG	Atmospheric Processes & Sys	Introduction to theoretical aspects of dynamic and synoptic meteorology and numerical weather prediction. The kinematic quantities of vorticity and divergence, as well as the analysis of weather systems will be emphasized. Prerequisite: MATH-142, Co-requisite: PHYS-161/162, or permission of the instructor. Must be taken concurrently with EAS-211.
Includes sustainability	EAS	EAS253	UG	Fundamentals of Climate Sys.	Introduction to the fundamental processes which effect climate and influence climate change. Topics include: earth's radiation budget, oceanic and atmospheric general circulations, ocean, atmosphere and land interactions, climate classifications, and the hydrologic cycle. Prerequisite: EAS-142, co-requisite: MATH-142 or better math course, or permission of the instructor.
Includes sustainability	EAS	EAS260	UG	Seminar Series	The seminar series is comprised of two components. Environmental scientists and professionals will be invited to give four seminars on important environmental issues. Three seminars will also be given to prepare students for their future careers. Must be declared environmental science / studies major or in the process of declaring to enroll in seminar.
Includes sustainability	EAS	EAS305	UG	Geomorphology	Introduction to landforms and surficial deposits, and to the erosional and depositional processes responsible for landform genesis. Long-term landscape development and aspects of larger scale geomorphology. Lecture three hours per week, occasional field trips. Spring or Fall semester.
Sustainability course	EAS	EAS310	UG	Environmental Issues	An examination of current and historical environmental issues from scientific, economic, social, and political perspectives, with an emphasis on energy, public health, land use, and global change. Prerequisites: EAS 101/102 or 103/104; BIOL 104, 106, 220, or 236; CHEM 161, 162, or 163; or consent of instructor.
Includes sustainability	EAS	EAS315	UG	Broadcast Meteorology I	The principles of broadcast meteorology will be introduced combining lectures and hands-on experience. Students will develop the skills necessary to communicate scientific information, with emphasis on weather forecasts. The campus radio station will be used by the students to present weather forecasts on a daily basis Prerequisites: EAS-244, EAS-211, or permission of the instructor.
Includes sustainability	EAS	EAS316	UG	Broadcast Meteorology II	Production will be explored, including the concepts behind the presentation and practical applications. The goal is to achieve the knowledge and experience necessary to obtain a position in broadcasting and the understanding on how to advance one's career. Prerequisite: EAS-315, or permission of the instructor.
Sustainability course	EAS	EAS325	UG	Global Change	Fundamentals of climate physics, global and regional scale average solar and terrestrial radiation regimes and respective radiation balances; radiation instruments of roof station; hydrologic cycle and water balance; energry balance for atmosphere, ground and total earth system; heat transfer in ocean and ground; paleoclimatology; climatic change. Fulfills three hours of science requirement. Spring semester.
Includes sustainability	EAS	EAS333	UG	Physical Meteorology I	The study of the physical principles underlying atmospheric processes of dry and moist air. Additional topics include the analysis of atmospheric stability and thermodynamic diagrams. Prerequisites: MATH-143, PHYS-161/162, EAS-244, or permission of the instructor.
Includes sustainability	EAS	EAS334	UG	Physical Meteorology II	The study of cloud microphysics and radiative transfer in the atmosphere. Topics include absorption and emission of radiation, solar and terrestrial radiation, cloud formation, heat and energy transfer, and optical phenomena. Prerequisites: PHYS-163/164, a 'C' or better in EAS-333, or permission of the instructor. Co-requisite: MATH-244.
Includes sustainability	EAS	EAS335	UG	Surface Water Hydrology	Fundamentals of precipitation, runoff, evaporation, and effects that various geomorphological and geological features have on these processes. Temporal and spatial variability of stream flow and flooding as influenced by both natural and cultural factors. Normally offered in Spring semester.
Includes sustainability	EAS	EAS340	UG	Soils	This course covers the physical-, chemical-, and biologically related properties of soils and the environmental issues surrounding soils and society. Lecture 3 hours per week plus several field trips and field exercises. Prerequisite or co-requisite: Chemistry 161 or equivalent.
Sustainability course	EAS	EAS360	UG	A Sustainable Energy Future	Assuming available fossil fuels will soon be exhausted, we examine alternative renewable resources and nuclear energy to sustain current US consumption. Mid-Western States will be highlighted for their wind, solar, and geothermal potential. Implications for new transportation systems, power generation, and community development will be quantitatively examined. Preq: MATH 141, EAS140 or equivalent.
Includes sustainability	EAS	EAS370	UG	Mesoanalysis of Severe Storms	The study of the structure, dynamics and climatology of severe local storms. Topics include: severe local storm climatology, the severe storm environment, mesoscale convective systems, supercells, tornados and tropical cyclones. Forecasting techniques for assessing the severe weather morphology and potential will also be covered. Prerequisite: EAS-333, or permission of the instructor.
Includes sustainability	EAS	EAS403	UG	Elements of Air Pollution	Meteorological aspects of air pollution. Topics include atmospheric transport, turbulence models, geochemical cycles, stratospheric ozone, oxidation, ozone, aerosols, and acid rain. Current topics in air pollution along with health effects and policy implications will also be addressed. Prerequisites: MATH-142, EAS-253 or EAS-103, or permission of the instructor.
Includes sustainability	EAS	EAS405	UG	Petrology	Origin, occurrence, classification and characteristics of igneous and metamorphic rocks. Lecture three hours per week. Spring or Fall semester.
Includes sustainability	EAS	EAS406	UG	Petrology Lab	Three hours laboratory per week. An introduction to the description, classification and analysis of igneous and metamorphic rocks in hand specimens and under the microscope. A brief introduction to optical mineralogy is included. Spring or Fall semester. Three hours laboratory per week. An introduction to the description, classification and analysis of igneous and metamorphic rocks in hand specimens and under the microscope. A brief introduction to optical mineralogy is included. Spring or Fall semester.
Includes sustainability	EAS	EAS410	UG	Surface Processes	Overview of physical and chemical processes and landform development in modern and ancient surface environments. Field trip required. Prequisites are EAS 101 and 102. Co-enrollment in EAS 411 is strongly encouraged. Overview of physical and chemical processes and landform development in modern and ancient surface environments. Field trip required. Prequisites are EAS 101 and 102. Co-enrollment in EAS 411 is strongly encouraged.
Includes sustainability	EAS	EAS411	UG	Surface Processes Laboratory	This laboratory illustrates and supplements the material covered in lectures of EAS-410 Surface Processes. Several field trips are taken during the semester. Prequisites are EAS 101, 102, and 240. EAS-410 is a pre-requisite or co-requisite.
Includes sustainability	EAS	EAS415	UG	Instrumentation & Remote Sens	Meteorological instruments will be studied from the viewpoint of performance characteristics, sensitivity, dynamical error, and response to sinusoidal and step impulses. Statistical treatment of output data; digital systems; computerized processing and retrieval as it applies to meteorology. Prerequisites: MATH-162, PHYS-163/164, or permission of the instructor. Must take EAS-334 concurrently.
Includes sustainability	EAS	EAS417	UG	Introduction to GIS	This class introduces concepts, science and theory of GIS with hands-on experiences. After successful completion of the course, students will be able to demonstrate fundamental techniques of geospatial analysis and mapping. Students may only apply credits towards their graduation requirements from one of the following courses: EAS-417, BIOL-417, or SOC-465.
Includes sustainability	EAS	EAS418	UG	Intermediate GIS	This course covers intermediate and advanced topics in GIS including remote sensing for GIS, geospatial statistics and GIS in biogeography. Prerequisites: one of the courses EAS-417, BIOL-417, or SOC-465. Students may only apply credits towards their graduation requirements from one of the following courses: EAS-418, BIOL-418, or SOC-466.
Includes sustainability	EAS	EAS419	UG	Geospatial Methods	For students and professionals in Environmental Sciences, this course explores an integrated GIS and remote sensing approach to solve real-world environmental problems. Through hands-on projects, the course will also prepare students for today's growing business needs in innovative server-based GIS solutions, relational databases and web mapping in an enterprise environment.
Includes sustainability	EAS	EAS420	UG	Synoptic Meteorology I	Extratropical cyclones, polar and tropical jet streams, synoptic climatology, teleconnections and quasi-geostrophic theory as it applies to weather forecasting. Prerequisites: EAS-334 or permission of the instructor. Must take EAS-444 concurrently.
Includes sustainability	EAS	EAS422	UG	Synoptic Meteorology II	Continuation of the laboratory study began in EAS-422. Topics include thermodynamic diagrams, sounding analysis, stability indices, isentropic analysis, severe local storms and numerical weather prediction as a forecasting tool. Prerequisites: MATH-244, a 'C' or better in EAS-420, or permission of the instructor. Students in the B.S. program must take EAS-445 concurrently.
Includes sustainability	EAS	EAS423	UG	Micrometeorology	Physical relations between profiles of temperature, moisture and wind in the atmospheric boundary layer, influence of low-level atmospheric turbulence, diffusion, and heat transfer processes on the boundary layer. Spring semester.
Includes sustainability	EAS	EAS425	UG	Project in Env. Science	This course will be lecture, field and laboratory based. The goal will be to discuss local and global environmental issues important to society and allow students to acquire first-hand knowledge of such issues in the laboratory and in the field. Lectures will emphasize the methods of scientific analysis, data collection, library research, indentification of environmental problems and possible solutions, report writing, and presentation of results. Several case studiess will be reviewed in detail as needed.
Includes sustainability	EAS	EAS426	UG	Environmental Geophysics	Lecture three hours per week. Geophysical techniques for exploration and characterization of shallow structure and media in the geosciences. Includes gravity, magnetic, seismic, electrical, borehole and ground-penetrating radar methods. Alternate Spring semesters.
Includes sustainability	EAS	EAS428	UG	Environmental Geochemistry	Lecture three hours per week. Application of geochemical principles towards the understanding of chemical processes occurring at or near the Earths surface. Alternate Fall semesters.

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Type	Dept	Course ID	Level	Title	Description
Includes sustainability	EAS	EAS430	UG	Structural Geology	EAS430 Lecture three hours per week. Description of structures in sedimentary, igneous and metamorphic rocks at scales ranging from atomic to continental. Introduction to stress, strain, deformation mechanisms, and techniques of kinematic and dynamic analyses. Alternate Spring semesters.
Includes sustainability	EAS	EAS431	UG	Structural Geology Lab	Laboratory focuses on map interpretation, collection of structural data, and geometrical techniques for solving structural problems. Half-day and weekend field trips are an integral part of the laboratory.
Includes sustainability	EAS	EAS433	UG	Climate Change & Variablility	The analysis of the fundamental principles and techniques used for climate change detection, attribution, and projection. Topics include: climate system interplay, natural variability and likely anthropogenic influences of the climate system, and climate change scenarios and modeling. Prerequisites: MATH-351, EAS-444, or permission of the instructor.
Includes sustainability	EAS	EAS435	UG	Groundwater Hydrology	Lecture 2 hours, laboratory 2 hours per week. Introductory course in hydrogeology. Describes relations between surface water and groundwater, principles of groundwater flow, relations between groundwater and geology, and problems related to groundwater pollution. Numerous experiments and simulations are used in the course. Alternate Fall semesters.
Includes sustainability	EAS	EAS437	UG	Earth Dynamics	Lecture three hours per week. The relation between plate tectonics and properties of Earths interior inferred from geological and geophysical observations. Emphasis will be on the relation of Earths surface features to processes at depth. Spring or Fall semester.
Includes sustainability	EAS	EAS444	UG	Principles of Dynmc Meteorol I	Dynamic principles underlying large-scale atmospheric motion. Topics include the development of the primitive equations, horizontal wind approximations, thermal wind, vertical coordinate transformations, kinematics, circulation theorem and the flow in the planetary boundary layer. Prerequisites: MATH-244, EAS-334 or permission of the instructor. Must take EAS-420 concurrently.
Includes sustainability	EAS	EAS445	UG	Principls of Dynmc Meteorol II	Analytical investigation of atmospheric motions. Topics include: wave dynamics, sound waves, gravity waves, Rossby waves, geostrophic adjustment, baroclinic instability and isentropic potential vorticity. Prerequisites: MATH-355, a 'C' or better in EAS-444, or permission of the instructor. Students in the B.S. program must take EAS-422 concurrently.
Includes sustainability	EAS	EAS452	UG	Seismic Exploration Lab	Laboratory and field problems, two hours per week. Collection and interpretation of seismic data; applications of the computer to data interpretation. Fall or Spring semester.
Includes sustainability	EAS	EAS460	UG	Intro Physics of Solid Earth	Physical properties and processes in the earths interior structure, composition, heat flow, rheological processes, and evolution. Spring or Fall semester.
Includes sustainability	EAS	EAS462	UG	Intro Earthquake Seismology	Lecture two hours, laboratory two hours per week. Causes and effects of earthquakes; parameters of seismic foci determinable from seismographic records; seismic geography and structure of the earth inferred from seismic data. Laboratory exercises with problems of record interpretation. Spring or Fall semester.
Includes sustainability	EAS	EAS465	UG	Weather Forecasting	The development of skills to assess the current and future states of the atmosphere. Efforts are focused on proper weather briefing techniques and on producing forecasts for short term, extended, fire, and aviation weather. There will also be post-evaluation of forecasts. Prerequisites: EAS-422 or permission of the instructor.
Includes sustainability	EAS	EAS468	UG	Mesoscale Meteorology	Theoretical examination of the dynamical and thermodynamical processes associated with mesoscale meteorological phenomena. Topics include vorticity and divergence tendencies, supercell thunderstorms, quasi-linear convective systems, mesoscale convective vortexes, and downbursts. Prerequisite: MATH-351, EAS-445, or permission of the instructor.
Includes sustainability	EAS	EAS470	UG	Theory of Vibrating Systems	Single and multiple degree offreedom oscillators. Theoretical and practical study of ground vibrations caused by earhtquakes, machinery, quarry blasts, and other disturbances; effects of these vibrations on buildings and other structures. Offered Spring or Fall semester.
Includes sustainability	EAS	EAS472	UG	Seismological Instrumentation	Lecture two hours, laboratory one hour per week. Physical principles underlying design and operation of the seismogrpah. Selection of the seismograph for specific problems; calibration and response characteristics. Laboratory practice in assembly, installation, and calibration of modern seismographs. Offered Spring or Fall semester.
Includes sustainability	EAS	EAS508	GR	Dynamics of the Atmosphere	Dynamic core course of the graduate program. Comprehensive treatments of dynamic processes of the atmosphere on all spatial-temporal scales. Integrates dynamic aspects of atmosphere ranging from storm movement to general circulation. Topics include cloud-storm dynamics, mesoscale processes, large-scale dynamics, and global circulation.
Includes sustainability	EAS	EAS509	GR	Physics of the Atmosphere	Physics core course of the graduate program. Comprehensive treatment of physical processes of the atmosphere on all spatial-temporal scales. Covers atmospheric processes ranging from eddy turbulence to general circulation. Topics include boundary layer turbulence, atmospheric radiation, cloud physics, numerical modeling.
Includes sustainability	EAS	EAS512	GR	Time Series Analysis in Geophy	Fourier transform, Fourier series, discrete Fourier transform, fast Fourier transform, digital filtering. Applications to Geophysics. Offered occasionally.
Includes sustainability	EAS	EAS515	GR	Properties of Earth Materials	This course gives a survey of the physical and chemical properties of geological materials.The course covers: physical properties of minerals and rocks; chemical properties of minerals and rocks; seismic and thermal parameters of the lithosphere and mantle; properties of surface fluids and loose aggregate materials. Normally offered every year
Includes sustainability	EAS	EAS517	GR	Divergent & Convergent Margins	This course in an in-depth, integrative examination into the geology and geophysics of divergent and convergent margins. Subject matter includes the physiography, petrology, geochemistry, sedimentology, seismic surveys, and " seismology of margins. Laboratory exercises," take-home assignments, classroom presentations and paper are an integral part of the course. Offered every other year.
Includes sustainability	EAS	EAS518	GR	Trans Margins & Plate Interior	This course in an in-depth, integrative examination into the geology and geophysics of transform margins and plate interiors. Subject matter includes the physiography, petrology, geochemistry, sedimentology, seismic surveys, and seismology of margins and plate interiors. Laboratory exercises, take-home assignments, classroom presentations and paper are an integral part of the course. Offered every other year.
Includes sustainability	EAS	EAS519	GR	Seminar in Geoscience	In-depth study of recent research developments in geophysics. This seminar or EAS-539 is offered every semester. In-depth study of recent research developments in geophysics. This seminar or EAS-539 is offered every semester.
Includes sustainability	EAS	EAS520	GR	Numerical Method of Prediction	Study of the concepts of dynamic meteorology underlying numerical weather prediction models, the development of the single and multi-level models and their applications. Climate modeling. Offered during the summer session.
Includes sustainability	EAS	EAS522	GR	Geophysical Data Processing	Modern digital data processing methods used in geophysics, based on Fourier and Z transforms.Topics include correlation, spectral analysis, and digital filters, with application to earthquake seismology, seismic, gravity, and magnetic exploration. Offered occasionally.
Includes sustainability	EAS	EAS524	GR	Tropical Meteorology	Study of the fundamentals of circulation in the tropics, the importance of sea-air interaction, convection processes, monsoons, energy transfer and hurricanes. Offered every Spring semester.
Includes sustainability	EAS	EAS526	GR	Synoptic & Dynamic of Jet Strm	The dynamic concepts useful in jet stream meteorology; methods of measuring various parameters in the free atmosphere; discussion of laboratory and computing models as they relate to planetary jet streams. Offered occasionally.
Includes sustainability	EAS	EAS527	GR	Meteorology of Severe Storms	Comprehensive treatment of the synoptic and mesoscale meteorological aspects and the mechanics of thunderstorms, tornadoes and downbursts. Offered every other Fall semester.
Includes sustainability	EAS	EAS528	GR	Diag & Pred of Severe Storms	Emphasis is placed on the development of short term (1-6 hours) forecasting techniques for severe storms. Topics include: instability mechanisms, severe storm structure and types, sounding analysis, low level jet inversion wind maxima, jet streak coupling, boundary layer thermal gradients, satellite/radar signatures of severe convection, flash flood forecasting and statistical guidance. Case studies of severe weather are discussed in class. Offered every other spring semester.
Includes sustainability	EAS	EAS529	GR	Mesometeorology	Comprehensive synoptic and theoretical discussion of mesoscale meteorological events, thermally induced circulations and nonconvective circulations. Offered occasionally.
Includes sustainability	EAS	EAS530	GR	Seminar in Atmospheric Science	Student will choose paper(s) from recent literature related to a topic assigned. After thorough study of the papers, students present their finding around the papers in the class. Peers students, instructor, and participating professor provide written critical comments. Presenting students response to the comments and indicate how he/she would improve their presentation based on the feedback.
Includes sustainability	EAS	EAS534	GR	Cloud Physics	Microphysics of warm and cold clouds, including diffusion, collision-coalescence, riming and aggregate processes. Offered occasionally.
Includes sustainability	EAS	EAS538	GR	Stat Methods in Meteorology	This course will introduce the students to the statistical methods used in the analysis of observational and numical model data. The topics include a review of standard statistical analysis of location and spread in data, as well as, hypothesis testing, field significance, simple stochatic models, and advanced data analysis techniques including principle component analysis. The students will also be introduced to Monte Carlo techniques as another way to access statistical significance.
Includes sustainability	EAS	EAS539	GR	Seminar in Seismology	In depth study of recent research developments or specific topics not covered in formal courses. This seminar or EAS-519 is offered every semester.
Includes sustainability	EAS	EAS542	GR	Advanced Structural Geology	This course gives a survey of microstructures and mesoscale structures that are important for understanding and deciphering the deformation history of deformed rocks. Offered every other year.
Includes sustainability	EAS	EAS545	GR	Advanced Petrology	An introduction to modern geochemical theory and methods and their application to the igneous and metamorphic rocks. Emphasis will be on the major " and trace element geochemistry of crust and" mantle rocks, and the use of geothermometers and geobarometers in deciphering the pressure-temperature histories of rocks. Offered every other year.

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Type	Dept	Course ID	Level	Title	Description
Includes sustainability	EAS	EAS546	GR	Geodynamics	Course focuses on the poorly understood, and hence controversial, large-scale processes and events that have affected the gross structure and chemistry of the Earth's mantle, crust, atmosphere, and biosphere. Offered occasionally.
Includes sustainability	EAS	EAS550	GR	Atmospheric Process & Applictn	Advanced applications of convective, dynamic, radiative, synoptic, and numerical meteorological principles to model atmospheric phenomena. Offered every spring semester.
Includes sustainability	EAS	EAS551	GR	Seismic Exploration Methods	Exploration for natural resources using seismic waves; refraction and reflection methods and interpretation; elementary seismic data processing. Offered alternate years.
Includes sustainability	EAS	EAS552	GR	Seismic Exploration Lab	Laboratory and field problems two hours per week. Collection and interpretation of seismic data; application of the computer to data interpretation. Offered in alternate years.
Includes sustainability	EAS	EAS554	GR	Poten & Elect Explortn Methods	Earth's gravity, magnetic and natural electrical and electromagnetic fields; density and magnetic and electrical properties of rocks; gravity, magnetic and electrical methods of exploration. Offered occasionally.
Includes sustainability	EAS	EAS561	GR	Satellite Meterology	Satellite instrumentation; rectification, analysis and interpretation of satellite radiation measurements and cloud photographs; use of these " data in the solution of specific meteorological" problems. Offered every other Fall semester.
Includes sustainability	EAS	EAS565	GR	Radar Meteorology	Fundamentals of a pulsed Doppler and non-Doppler radar. Velocity and range folding. Doppler radar display and signature interpretation. Characteristics of convective storms and severe weather signatures. Offered every other Spring semester.
Includes sustainability	EAS	EAS570	GR	Convection in the Atmosphere	Derivation of consistent equations to study thermal convective phenomena in the atmosphere, the interaction between convective elements and their environments, simulation of thunderstorms and arrangement of convection. Offered every other Fall semester.
Includes sustainability	EAS	EAS572	GR	Seismological Instrumentation	Lecture two hours, laboratory one hour per week. Physical principles underlying design and operation of the seismograph. Selection of the seismograph for specific problems; calibration and response characteristics. Laboratory practice in assembly, installation and calibration of modern seismographs. Offered in alternate years.
Includes sustainability	EAS	EAS575	GR	Land-Atmosphere Interaction	Principal physical and dynamic processes governing exchanges of mass and energy among soil, vegetation, bodies of water, and overlying atmosphere: precipitation, evapotranspiration, infiltration, snowmelty, and surface-runoff. Parameterization of these processes in numerical models over large tempo-spatial scales.
Includes sustainability	EAS	EAS610	GR	Adv Top in Solid Earth Geophys	Physics of the earth's interior; emphasis on current research problems. Topics from seismology, geology, heat flow, geomagnetism, and tectonophysics. Offered occasionally. Physics of the earth's interior; emphasis on current research problems. Topics from seismology, geology, heat flow, geomagnetism, and tectonophysics. Offered occasionally.
Includes sustainability	EAS	EAS619	GR	Adv Seminar in Geophysics	In-depth analysis of topics for Ph.D. students. Offered occasionally.
Includes sustainability	EAS	EAS620	GR	Advanced Geomagnetism	Lecture course on spherical harmonic analysis of the main magnetic field of the earth and of transient magnetic variations. Processes in the ionosphere relating to geomagnetism; topics in paleomagnetism and magnetohydrodynamics included. Offered occasionally.
Includes sustainability	EAS	EAS630	GR	Seminar in Atmospheric Science	Student will choose paper(s) from recent literature related to a topic assigned. After thorough study of the papers, students present their finding around the papers in the class. Peers students, instructor, and participating professor provide written critical comments. Presenting students response to the comments and indicate how he/she would improve their presentation based on the feedback.
Includes sustainability	EAS	EAS659	GR	Numer Mthds of Atmos Sciences	Topics include the solution of linear algebraic systems, generalized Fourier Series methods of boundary-initial-value problems, finite difference solutions of partial differential equations and statistical techniques of geophysical data processing. Applications to problems of interest in the atmospheric sciences. Offered occasionally.
Sustainability course	ECE	ECE470/570	UG	Energy Technologies 1	The course is to introduce current energy consumption of the United States and the World. It is to review/study various energy sources and energy consumption portfolio of the United States and major industrial nations. It is then to consider the impact of varous alternative renewable energy sources and energy conservation methods on overall energy consumption equation. In this course several major renewable energy sources such as wind, solar, geothermal as well as energy conservation methods will be studied.
Sustainability course	ECE	ECE570	GR	Energy Technologies 1	The course is to introduce current energy consumption of the United States and the World. It is to review/study various energy sources and energy consumption portfolio of the United States and major industrial nations. It is then to consider the impact of varous alternative renewable energy sources and energy conservation methods on overall energy consumption equation. In this course several major renewable energy sources such as wind, solar, geothermal as well as energy conservation methods will be studied.
Includes sustainability	ECON	ECON410	UG	Urban-Regional Economics	Urban housing, transportation, employment, growth, government; emphasis on public policies such as those dealing with unemployment, poverty and the fiscal plight of central cities. Pre-requisite: ECON 314 & ECON 312.
Includes sustainability	ECON	ECON412	UG	Law and Economics	This course broadly examines the roles of prices and markets, the causes of market failures and the criteria for legal and public-policy intervention. Specific topics include (1) the long-run and short-run economic interests of individual, corporate and public sector clients in a variety of legal contexts, (2) the normative judgments that are implicit in many economic policies and the legal structures implementing such policies; and (3) the uses and limits of economic analysis and economic data in solving a variety of social problems. Prerequistes: ECON 312 & 314 or permission from Chair. (MGT 218 highly recommended) [prerequiste for ECON 312 is: ECON 190] [prerequistes for ECON 314 is: ECON 190 and MATH 132 or higher]
Includes sustainability	ECON	ECON440	UG	Labor Economics	Labor markets, determinants of labor supply, labor demand and wages (both as cost and income); institutions affecting labor, including trade unionism and labor law; work-leisure trade-off; the work ethic as it affects work hours and productivity. Prerequisite: ECON-314.
Includes sustainability	ECON	ECON456	UG	Economic Development	Analyzes elements of economic growth in economies that are both internationally open and relatively poor; accumulation of human and physical capital, technological change, market structure, and international linkages. Prerequisite:ECON-314.
Includes sustainability	ECON	ECON470	UG	Health Economics	Analyze the economics of health and health care markets using the standard tools of microeconomics and empirical analysis. The course considers three main topics: inputs to health and the demand for medical care, structure and consequences of public and private financing of health care, and the supply of health care. Current public policy topics will be highlighted. Pre-Reqs: ECON 314 and MATH 132 or 142 or higher " level of calculus course. "
Includes sustainability	ECON	ECON617	GR	History of Economic Thought	Critical assessment of economic thought from ancient times to the 19th century.
Includes sustainability	ECON	ECON670	GR	Health Economics	Analyze the economics of health and health care markets using the standard tools of microeconomics and empirical analysis. The course considers three main topics: inputs to health and the demand for medical care, structure and consequences of public and private financing of health care, and the supply of health care. Current public policy topics will be highlighted. Pre-Reqs: ECON 314 and MATH 132 or 142 or higher " level of calculus course. "
Sustainability course	EOH	EOH500	GR	Environmental & Occup Health	Course addresses the interaction of the physical, psychological, and social environments of individuals in which they work and live. It presents a broad survey of the major environmental issues facing contemporary society in first and third world countries. The course combines an overall ecological concern with specific elements related to personal and community health, emphasizing the interrelatedness of the two and conveying an awareness of how current environmental issues directly affect our lives. (Offered twice each year.)
Includes sustainability	EOH	EOH560	GR	Pol, Sci & Dec in Environ Hlth	The purpose of this course is to provide students with analytical tools they can use to think critically about environmental policymaking. The focus of the course is on the interface between the fields of environmental, public health, and policy sciences. Therefore, special attention is paid to policy decisions that affect environmental protection and public health. The course examines the current approaches to environmental regulation such as comma nd and control, comparative risk assessment, and market-based incentives. It also discusses environmental justice issues, sustainable development, and policies concerning particular environmental problems in the United States and the international community. (Offered annually.)
Includes sustainability	EOH	EOH597	GR	Res Top in Envrn & Occup Hlth	This course provides direct research experience in environmental health. Content is developed jointly between the student(s) and a faculty mentor.
Includes sustainability	GIS	GIS217	UG	GIS in Civil Engineering	This course discusses the fundamental concepts of GIS, and the methods and software used to solve civil engineering programs. The course also covers skills to deal with remote sensing data, basic and differential GPS surveying to prepare students for today's growing business needs in civil engineering companies and government agencies.
Includes sustainability	GIS	GIS401	UG	Introduction to GIS	This class introduces concepts, science, and theory of GIS and provides hands-on learning experiences. After successful completion of the course, students will be able to demonstrate fundamental techniques of geospatial analysis and mapping.
Includes sustainability	GIS	GIS402	UG	Intermediate GIS	This course covers intermediate and advanced topics in GIS, including remote sensing for GIS, geospatial statistics, and GIS biogeography. Each subject is presented by a professor who specializes in it. (Offered every spring.)

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Type	Dept	Course ID	Level	Title	Description
Includes sustainability	GIS	GIS403	UG	Geospatial Methods in Enviornmental Studies	For students and professionals in Environmental Sciences, this course explores an integrated GIS and remote sensing approach to solve real-world environmental problems. Through hands-on projects, the course will also prepare students for today's growing business needs in innovative server-based GIS solutions, relational databases and web mapping in an enterprise environment. Geospatial methods to be discussed include: spatial analysis, web GIS, database design, management and data mining with integration of GIS, remote sensing and GPS, and varies applications of the techniques with special attention in environmental studies such as risk assessment and mitigation, environmental modeling, natural resource management, water/air pollution & control, forest fire mapping, health and environmental change analysis etc.
Includes sustainability	GIS	GIS404	UG	Introdcution to Remote Sensing	This course include fundamental knowledge on the physics of remote sensing; photogrammetry; multispectral, hyperspectral, and thermal imaging; RADAR; and LIDAR. Principles are reviewed in lectures, and lab assignments cover image processing, environmental modeling, and analysis. The course objective is to demonstrate applications of remote sensing in environmental sciences with software training in ENVI+IDL and SARscape. (Offered every fall.)
Includes sustainability	GIS	GIS405	UG	Microwave Remote Sensing: SAR Principles, Data Processing, and Applications	The course covers principles of synthetic aperture radar (SAR), SAR satellites and data sources, SAR image processing, interpretation and applications. Popular data processing techniques, including SAR intensity processing, InSAR and DInSAR techniques, polarimetry tools/classification methods, Persistent Scatterer Interferometry are discussed through detailed step-by-step lab work on the processing chain including measuring earthquake deformation, land subsidence, landslides, building sinking, and tree height/health estimation, DEM generation, and various environmental applications. Students will have experience on ordering, processing and interpreting SAR data, and an opportunity to discuss advantages and limitations of SAR remote sensing for their specific research, and to explore RADAR w/ LiDAR for its common applications in vegetatation assessment and terarain charecetrization.
Includes sustainability	GIS	GIS406	UG	Interferometric Synthetic Aperture Radar	This course focuses on providing application oriented forum on InSAR for geoscientists. Principles of InSAR, DInSAR, timeSAR are introduced through hands-on lab work on measuring earthquake deformation, volcanic unrest, land subsidence due to extraction of groundwater, oil, gas, and coal mining using both commercial and open-source software tools.
Includes sustainability	GIS	GIS501	GR	Introduction to GIS	This class introduces concepts, science, and theory of GIS and provides hands-on learning experiences. After successful completion of the course, students will be able to demonstrate fundamental techniques of geospatial analysis and mapping.
Includes sustainability	GIS	GIS502	GR	Intermediate GIS	This course covers intermediate and advanced topics in GIS, including remote sensing for GIS, geospatial statistics, and GIS biogeography. Each subject is presented by a professor who specializes in it. (Offered every spring.)
Includes sustainability	GIS	GIS503	GR	Geospatial Methiods in Enviornmental Studies	For students and professionals in Environmental Sciences, this course explores an integrated GIS and remote sensing approach to solve real-world environmental problems. Through hands-on projects, the course will also prepare students for today's growing business needs in innovative server-based GIS solutions, relational databases and web mapping in an enterprise environment. Geospatial methods to be discussed include: spatial analysis, web GIS, database design, management and data mining with integration of GIS, remote sensing and GPS, and varies applications of the techniques with special attention in environmental studies such as risk assessment and mitigation, environmental modeling, natural resource management, water/air pollution & control, forest fire mapping, health and environmental change analysis etc.
Includes sustainability	GIS	GIS504	GR	Introduction to Remote Sensing	This course include fundamental knowledge on the physics of remote sensing; photogrammetry; multispectral, hyperspectral, and thermal imaging; RADAR; and LIDAR. Principles are reviewed in lectures, and lab assignments cover image processing, environmental modeling, and analysis. The course objective is to demonstrate applications of remote sensing in environmental sciences with software training in ENVI+IDL and SARscape. (Offered every fall.)
Includes sustainability	GIS	GIS505	GR	Microwave Remote Sensing: SAR Principles, Data Processing, and Applications	The course covers principles of synthetic aperture radar (SAR), SAR satellites and data sources, SAR image processing, interpretation and applications. Popular data processing techniques, including SAR intensity processing, InSAR and DInSAR techniques, polarimetry tools/classification methods, Persistent Scatterer Interferometry are discussed through detailed step-by-step lab work on the processing chain including measuring earthquake deformation, land subsidence, landslides, building sinking, and tree height/health estimation, DEM generation, and various environmental applications. Students will have experience on ordering, processing and interpreting SAR data, and an opportunity to discuss advantages and limitations of SAR remote sensing for their specific research, and to explore RADAR w/ LiDAR for its common applications in vegetatation assessment and terarain charecetrization.
Includes sustainability	GIS	GIS506	GR	Interferometric Synthetic Aperture Radar	This course focuses on providing application oriented forum on InSAR for geoscientists. Principles of InSAR, DInSAR, timeSAR are introduced through hands-on lab work on measuring earthquake deformation, volcanic unrest, land subsidence due to extraction of groundwater, oil, gas, and coal mining using both commercial and open-source software tools.
Includes sustainability	HADM	HADM510	GR	Quality Impr in Hlth Cre Mngt	This course examines the historical development, current concepts and techniques and future trends related to the monitoring and evaluation of the quality of health care services. Cases will be used to present current issues surrounding attempts to integrate quality management and increased accountability in health care organization. (Offered annually.)
Includes sustainability	HADM	HADM513	GR	Health Information Systems	This course is designed to develop four areas of student knowledge, skills, and competencies in Health Information Management (HIM). It provides a broad overview of the theory and application of computers in the health setting, with emphasis on the health manager's role in relation to the information function. It introduces students to computer hardware, software and operating systems through hands-on experience with specific application programs such as word processing, spreadsheets, statistical packages , and data base managers. Students learn to identify the necessary resources, staff support and change management required to develop, implement, and evaluate a health information system. Finally, the course explores the potential and limits of information technology in improving community level health delivery via such resources as the Internet. (Offered annually.)
Includes sustainability	HADM	HADM534	GR	Health Care Marketing	The purpose of this course is to train future health services professionals in managing and marketing health services from a strategic perspective. The course is intended to present principles, theories, methods, and tools used in developing, implementing, and managing successful marketing strategy, which creates and shapes the future. The marketing process, consumer behavior, the marketing mix, and controlling and monitoring marketing processes are examined in relationship to the unique and changing aspects of the health services industry. Offered annually.
Includes sustainability	HADM	HADM537	GR	Organizational Beh & Mgmt	This course provides an understanding of how decision makers manage an organization to achieve strategic initiatives and the impact that these efforts have on the behavior of people within the organization. Topics include: organizational effectiveness, strategic alignment, organizational structures and processes, group processes, leadership, decision making, negotiation, motivation and human resource management. (Offered annually.)
Includes sustainability	HADM	HADM580	GR	Strat Mgmt in Hlthcare Orgzns	This is the capstone course in the health administration curriculum and is open to advanced MHA students or others with the permission of the instructor. The purpose of this course is to assist the student in integrating the knowledge and skills developed during the course of study in the MHA program in the context of strategic thinking and strategic management of health care organizations. Integration is supported by individual and team analysis of complex cases, at least two of which are simulations. (Offered annually.)
Includes sustainability	HMP	HMP130	UG	Contemp Challenges Hlth Care	This course is an introduction to the US health care system and its many challenges. Students will gain a basic understanding of private insurance operations, public financing for health care including Medicare and Medicaid, the operations of hospitals and clinics, as well as health care professionals' roles in the health care system. Students will be encouraged to discover creative solutions to these challenges both from domestic programs and other countries' health care systems. x HMP179 . x HMP193 .
Includes sustainability	HMP	HMP210	UG	Business Sectors in Hlth Care	This course describes and analyzes business sectors within healthcare that significantly affect cost and quality of health services. Examples are suppliers (pharmaceuticals, medical-surgical supplies, medical devices, distributors, and group purchasers) financial intermediaries (HMOs, PBMs) and health care providers (hospitals, medical groups, nursing homes). Each sector is analyzed in terms of organizations, products/services, customers, and strategic business practices.
Includes sustainability	HMP	HMP250	UG	Mgmt of Hlth Care Organization	This course provides students with an introductory overview of the major functional areas of health care management and shows their relevance to the delivery of health care services in a turbulent and very complex environment. Health care organizations are broadly clustered into: strategy and marketing, financial management, human resources management and data and systems.
Includes sustainability	HMP	HMP320	UG	Health Care Economics & Policy	The main purpose of this course is to enable students to apply economic theory and analysis to health issues and problems, by emphasizing how markets work and why they fail in the production of health and delivery of health care services. Topics covered include an overview of the US health economy; the production of health and the demand for health care; market structure; the market for health insurance, managed care, and hospital services; and the role of public policy in producing healthy populations.
Includes sustainability	HMP	HMP340	UG	Health Care Marketing	The purpose of this course is to train future health services management professionals marketing and management of health services. The course is intended to present concepts and tools used in developing, implementing, and managing successful marketing strategy. The marketing processes, consumer behavior, marketing mix, controlling and monitoring marketing processes are studies relative to the unique and changing aspects of the health services industry.

Saint Louis University Sustainability Courses

Type	Dept	Course ID	Level	Title	Description
Includes sustainability	HMP	HMP350	UG	Hlth Care Human Resources Mgmt	The focus of this course is on functions and concepts required for managing human resources in health care organizations. It integrates traditional human resource management (HRM) with ideas from other organizational behavior. Course content includes recruitment, training and development, compensation, performance appraisal, motivation, union activity, and conflict resolution.
Includes sustainability	HMP	HMP420	UG	Health Care Financial Mgmt	Corporate finance concepts and techniques are applied to health care organization decision making using relevant case studies. In addition to basic finance concepts, topics include capital acquisition, cost of capitol, capital investment decisions, tools of risk analysis, and financial and operating analysis. Analyses are applied to for-profit and not-for-profit health care organizations. The course employs extensive use of spreadsheets.
Includes sustainability	HMP	HMP450	UG	Health Operations Management	Course examines operational issues in health care management. Topics include systems analysis, continuous quality improvement and re-engineering, demand forecasting, facility location and design models, decision analysis techniques, linear programming, queuing and waiting models, inventory control models, and statistical quality control. The goal is to instill an understanding of the language, applications, and limitations of quantitative models with regard to decision-making and problem solving in health service organizations.
Includes sustainability	HMP	HMP460	UG	Strategic Mgmt in Hlth Care	This is the capstone course in the health administration undergraduate curriculum and is open to advanced BSHM students or others with the permission of the instructor. The purpose of this course is to assist the student in integrating strategic thinking and strategic management of health care organizations. Integration is facilitated by individual and team analysis of complex cases, including simulations.
Includes sustainability	HMP	HMP500	GR	Health Care Organization	This course provides an overview of and orientation to the US health care delivery system. Topics include the delivery, financing, regulation, and administration of health care services, and the economic, legal, political, and social factors which influence the health care system. Historical and contemporary issues are addressed. (Offered annually.)
Includes sustainability	HMP	HMP510	GR	Quality Impr in Hlth Cre Mngt	This course examines the historical development, current concepts and techniques and future trends related to the monitoring and evaluation of the quality of health care services. Cases will be used to present current issues surrounding attempts to integrate quality management and increased accountability in health care organization. (Offered annually)
Includes sustainability	HMP	HMP511	GR	Health Operations Management	Course examines operational issues in health care management. Topics include systems analysis, continuous quality improvement and re-engineering, demand forecasting, facility location and design models, decision analysis techniques, linear programming, queuing and waiting models, inventory control models, and statistical quality control. The goal is to instill an understanding of the " language, applications, and limitations of" quantitative models with regard to decisi on making and problem solving in health care organizations. (Offered annually.)
Includes sustainability	HMP	HMP513	GR	Health Information Systems	This course is designed to develop four areas of student knowledge, skills, and competencies in Health Information Management (HIM). It provides a broad overview of the theory and application of computers in the health setting, with emphasis on the health manager's role in relation to the information function. It introduces students to computer hardware, software and operating systems through hands-on experience with specific application programs such as word processing, spreadsheets, statistical packages , and data base managers. Students learn to identify the necessary resources, staff support and change management required to develop, implement, and evaluate a health information system. Finally, the course explores the potential and limits of information technology in improving community level health delivery via such resources as the Internet. (Offered annually.)
Includes sustainability	HMP	HMP518	GR	Behavioral & Environ Aspects	This course examines the corporate responsibility of health services administrators in reducing environmental and occupational health risks of communities and individuals they serve and of employees and patients who use or work in the health delivery system.
Includes sustainability	HMP	HMP520	GR	Health Care Economics	This course examines the corporate responsibility of health services administrators in reducing environmental and occupational health risks of communities and individuals they serve and of employees and patients who use or work in the health delivery system.
Includes sustainability	HMP	HMP530	GR	Mgmt of Hlth Care Organization	This course focuses on the macro-organizational concepts of managing complex health care organizations. Health care organizations are complex systems transforming inputs (professional, supplies, etc.) into outputs (health services) for customers (patients). To perform well, these systems require appropriate environmental assessments, strategy, governance, organizational structure, work processes, distribution of power, innovation and change. These requirements for effective organizational performance form the core content of the course. Offered annually.
Includes sustainability	HMP	HMP534	GR	Health Care Marketing	The purpose of this course is to train future health services professionals in managing and marketing health services from a strategic perspective. The course is intended to present principles, theories, methods, and tools used in developing, implementing, and managing successful marketing strategy, which creates and shapes the future. The marketing process, consumer behavior, the marketing mix, and controlling and monitoring marketing processes are examined in relationship to the unique and changing aspects of the health services industry. Offered annually.
Includes sustainability	HMP	HMP535	GR	Business Sectors in Health	This course introduces students to business sectors within healthcare that strategically impact cost and quality of health services. Covered sectors include suppliers (pharmaceuticals, medical-surgical supplies, medical devices, distributors, and group purchasers), financial intermediaries (HMOs, PBMs) and care providers (hospitals, medical groups, nursing homes). Each sector is analyzed in terms of organizations, products/services, customers, and strategic business practices.
Includes sustainability	HMP	HMP537	GR	Organizational Beh & Mgnt	This course provides an understanding of how decision makers manage an organization to achieve strategic initiatives and the impact that these efforts have on the behavior of people within the organization. Topics include: organizational effectiveness, strategic alignment, organizational structures and processes, group processes, leadership, decision making, negotiation, motivation and human resource management. (Offered annually.)
Includes sustainability	HMP	HMP540	GR	Legal Asp of Hlth Srvs Mgmt	This course is designed to familiarize students with legal issues in the health care field. It is also designed to provide students with insight into how the legal system functions, how lawyers analyze legal problems, and how health care administrators may interact with the legal system and lawyers. (Offered annually.)
Includes sustainability	HMP	HMP545	GR	Org Hlth Srv & Hlth Policy	This course provides an overview and orientation of health services in the United States, various factors that influence the delivery of health services, the role of health policy, and the expanded role of hospitals and clinics within the broader public health perspective. Historical and contemporary issues are addressed.
Includes sustainability	HMP	HMP546	GR	Org Behav & Mgmt for Cmm Bft	This course provides an understanding of how decision maker manage an organization to achieve strategic initiatives and the impact that these efforts have on the behavior of people within the organization. Topics include: organizational effectiveness, strategic alignment, organizational structures and processes, group processes, leadership, decision making, negotiation, motivation and human resource management.
Includes sustainability	HMP	HMP550	GR	Health Policy	A course in health policy for advanced graduate students. The purposes of the course are to orient the students to the policy process, to increase the student's understanding of the nature of health policy making and health politics and to provide the student with an opportunity to develop an in-depth understanding of current health care policy issues. (Offered every other year.)
Includes sustainability	HMP	HMP552	GR	Legislative Hlth Policy & Proc	This course provides a theoretical and practical understanding of the procedures and practices that define legislative health advocacy in the area of Federal health policy. The course provides students with an understanding of the legislative procedures and process, and the skills needed to address public health policy issues at the federal level. Students will examine aspects of planning, strategic thinking and political endeavors necessary to develop and implement legislative policy. Prerequisite: HMP 550.
Includes sustainability	HMP	HMP555	GR	Global Health Mgmt & Policy	This course addresses global variation in health care policy formulation and implementation as well as major differences in health care organization management structure and operations across health care systems. Throughout the course, specific health care systems will be compared via case studies to describe the globalization of health care.
Includes sustainability	HMP	HMP570	GR	Health Care Finanical Mgmt	Corporate finance techniques for financial " decision-making are applied to health care " organizations using "real world" case studies. In addition to basic finance concepts, topics include capital acquisition, cost of capital, capital investment decisions, tools of risk analysis, and financial and operating analysis. Both for-profit and not-for-profit health care organizations are studied. The course employs extensive use of Excel spreadsheets. (Offered annually.)
Includes sustainability	HMP	HMP572	GR	Govt Financing of Health Care	This course introduces the students to the economic theory of public goods and relates it to the role of government in providing for the maintenance and improvement of community health. The efficiency and effectiveness of current government financing strategies are analyzed. Topics include the theories of public goods and public choice, public budgeting processes, cost-benefit/cost effectiveness analysis of public investment, structure of Medicare, Medicaid and public health funding, and the economic effe cts of public financing of health-related services (Offered annually.)

Saint Louis University Sustainability Courses

Type	Dept	Course ID	Level	Title	Description
Includes sustainability	HMP	HMP580	GR	Strat Mgmt i Hlthcare Orgzns	This is the capstone course in the health administration curriculum and is open to advanced MHA students or others with the permission of the instructor. The purpose of this course is to assist the student in integrating the knowledge and skills developed during the course of study in the MHA program in the context of strategic thinking and strategic management of health care organizations. Integration is supported by individual and team analysis of complex cases, at least two of which are simulations. (Offered annually.)
Includes sustainability	IB	IB600	GR	Global Business Environ	This course seeks to examine international business issues faced by corporations operating across several countries and different external environments. The focus is, therefore, on the regional and global business environment of international firms, integrating trading, investing, cultural and business practices.
Includes sustainability	IB	IB642	GR	Global Environment Strategy	This course focuses on strategic planning, implementation, and evaluation of management decision making within an international organization. Strategy is multidisciplinary by design and as such will draw on the student's experience and understanding of the functions of business and the forces that impact the business success. It combines a range of viewpoints and analytical techniques. The course will address the challenges involved in understanding the shifting dynamics and multifaceted phenomena that confronts global business.
Sustainability course	IDE	IDE200	UG	Energy in the City	With focus on energy efficiency and sustainability in an urban environment, students will identify energy sources, examine the use of energy, determine the costs of energy, and explore how oil-based energy can be conserved and eventually replaced. Students will conduct experiments for better understanding of basic energy concepts.
Includes sustainability	LAW	LAW768	GR	Land Use Control	Land Use Control will focus on the limitations on the use of land through government action; traditional techniques of planning, zoning and subdivision regulations; new developments including use of property tax for land use control; historic preservation, transfer of development rights, growth of regional and statewide statutory regulations, neighborhood collaborative planning, and the relationship of land use regulation to environmental regulation.
Includes sustainability	LAW	LAW787	GR	Urban Housing & Development	This course will explore current issues in housing and community development law, as exemplified by homelessness, scarcity of affordable housing for lower income families, and problems in the development/redevelopment of cities. The course is divided into three "units" of 1 credit " each. Students must identify on their" registration form, which units they want to enroll " in. Federal and State Housing" Programs: This unit will meet 8/21 through 9/21 and will explore basic concepts of housing markets and the use of subsidies to close financing gaps, the theories underlying federal and state housing programs, the concepts of demand side and supply side subsidies and review the history of federal and state housing " programs. The Urban Development" Process: This unit will meet 9/25 through 10/26 and will explore the use of the police power in community development and rehabilitation programs, including housing codes, the use of eminent domain to acquire property, problems of displacement and the use of the community development block grant program (CDBG) to encourage creation of public-private development " partnerships. Housing" Discrimination: This unit will meet 10/30 through 11/19 and will explore the federal Fair Housing Act and the related problems of preventing housing discrimination and encouraging the development of integrated " communities. Students are expected to" submit a research paper 10-15 pages on a topic to be selected in consultation with the professor for " each unit they elect to take. "
Includes sustainability	MENG	MENG502	GR	Technology Entrepreneurship	This is course provides a basic understand of the entrepreneurial of new venture process. Students discuss the critical role that opportunity recognition and product creation plays in that process. The emphasis is on identifying high-potential, technology-intensive opportunities, gathering resources, and managing rapid growth and significant risks using principled decision-making skills. The students will develop a feasibility study for a product in the studio component.
Sustainability course	MENG	MENG570	GR	Innovation, Creativity & Sust	This is course provides state-of-the-art coverage on creativity and innovation effectiveness that leads to market success. The course discusses the latest concepts, theories, models, strategies and cases of market-focused creativity and innovation. Various tools for technological innovation will be covered. Further, the course discusses new opportunities and potential product innovations in the sustainability area. Students will be actively involved in practical and challenging exercises of creativity, innovation, and sustainability that lead to market-ready green technology products and services.
Includes sustainability	MGT	MGT319	UG	Social Enterpreneurship	This course is designed to introduce basic concepts and techniques of entrepreneurship applied to promote social good in all three sectors of the economy (for-profit, non-profit and government) to sophomores and juniors. The goal is to help students be better prepared for upper-level entrepreneurship and service leadership courses that build on social entrepreneurship knowledge. The course will cover the fundamentals of entrepreneurship with a particular focus on entrepreneurship in the pursuit of the greater good through charitable efforts, self-sustaining improvement efforts, and institutional efforts with a clear social benefit as part of the organization’s mission. Prerequisites: MGT300 (Introduction to Management)
Includes sustainability	MGT	MGT602	GR	Legal Enviornment of Business	Directed at complex decision-making, requiring recognition and integration of legal considerations in managing the socially reponsible organization. Provides an overview of the relationship of the business organization to the legal system, including various modes of dispute resolution. Addresses areas of legal risk and responsibility, emcompassing how business is affected by, and interacts with, state and federal laws and regulation.
Includes sustainability	MGT	MGT603	GR	Legal, Ethical, Professional Environment of Business	This course is directed at complex decision-making, requiring recognition and integration of legal, ethical and professional considerations in managing the socially responsible organization. It provides an overview of the relationship of the business organization to the legal system, including various modes of dispute resolution. In addition, the course addresses areas of legal risk and responsiblity, encompassing how business is affected by, and interacts with, state and federal laws and regulations.
Includes sustainability	MGT	MGT613	GR	Value Based Organizational Design	The study of organizations is integrated units and subunits that must effectively define and interact with key stakeholder groups in their internal and external environments. Topics will include organizational effectiveness, environmental scanning and management, design and structure, organizational change, communication systems, conflict and politics, stakeholder management, and organizational culture. Pre-requisite: MGT 600.
Includes sustainability	MGT	MGT615	GR	Current Issues in Management	Comprehensive in-depth analysis of current management problems and issues. Focus of the course will be contemporary topics facing the executive in today's organization and society. Issues will vary, but may include such topics as corporate social responsibility and governance, ethical challenges, corporate culture and organizational politics, and selected workplace issues.
Includes sustainability	MGT	MGT628	GR	Legal and Ethical Environment	Directed at managerial decision-making, requiring recognition and integration of legal and ethical considerations in managing complex organizations. Introduces students to ethical issues and analytical frameworks as a foundation for an understanding of the legal system and its operations to establish laws and resolves disputes. Looks at the business and organizational impact of state and federal laws and regulations.
Sustainability course	MKT	MKT626	GR	Green Marketing	Identification of local, national and global environmental concerns, issues of social justice, and trends towards sustainable development in international business. Examination of marketing responses, initiatives, and opportunities. Development of appropriate and effective green marketing strategies. Pre-requisite: MKT 600.
Includes sustainability	MKT	MKT646	GR	Strategic Marketing	A study of how firms gain competitive advantage by creating customer value in a dynamic market environment. Topics include: the strategic process, competitive analysis, becoming a cost leader, making quality a strategic weapon, customer value analysis and global positioning. Students will undertake a group project to analyze a firm's competitive market strategy and value positioning, and will recommend alternative approaches.
Sustainability course	MORL	MORL570	GR	Health Care Ethics	A study of the ethical issues encountered in health care today. Particular attention is given to informed decision-making, the use/non-use of life-sustaining interventions, genetic and reproductive interventions, resource allocation, managed care and health care for-profit. (Prerequisite: Foundations of Catholic Morality) 2 hours.
Sustainability course	MOS	MOS502	GR	Sustainability Foundations	The ‘Sustainability Foundations’ course establishes the critical connections between those separate but important understandings of sustainability, defining the movement from an integrated, systems-based perspective. Students will develop a basic understanding of how critical concepts from social work, business, engineering, public policy and other disciplines converge when addressing the challenges that sustainability/environmental related problems pose in society. A critical component of this course will be the development of students’ foundational ethical reasoning skills, enabling them to apply Saint Louis University’s humanistic perspective on sustainability when contemplating issues and potential solutions.
Sustainability course	MOS	MOS505	GR	Sustainable Business Practices	In today's complex business environment, organizations are constantly challenged to develop and execute innovative policies, processes and activities that insure profitable growth. Business leaders often believe that their continued growth is not compatible with environmental stewardship. This course explores methods for organizations to pursue economic development while protecting the environment. Operational topics such as measuring environmental foot prints, the emergence of eco-technologies and greening of the supply chain are explored within a local and global context.
Sustainability course	MOS	MOS506	GR	Environmental Aspects: Sustain	A minimum requirement for humans to survive is access to 1) air to breath, 2) water to drink, and 3) food to eat. Without these three essentials, humans die. The course is structured around three essential ingredients of life. We will start off with water-related issues in part because there are two optional water-related field trips in September in which you can participant. We will then learn about groundwater and soils, which is the foundation of most food production. And then we will spend one week covering the topic of clean air.

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Type	Dept	Course ID	Level	Title	Description
Sustainability course	MOS	MOS511	GR	Sust in Society & Cultures	In this course we explore policy questions at the global, national, and local scale, developing a well-rounded understanding of terms and concepts used to describe sustainable development. With this broader understanding students will be able to more fully appreciate universal conflicts that are present in the classic environment/economy debate.
Sustainability course	MOS	MOS516	GR	Envrntl Politics & Policy	Examines the politics and processes of U.S. environmental policy-making. Topics include: why government makes environmental laws; competing values influencing environmental policy; institutions, processes, and political actors that shape the creation and implementation of environmental laws; how government addresses environmental problems; how American actions influence international attempts to address environmental problems.
Sustainability course	MOS	MOS522	GR	Certification in Sustainability Reporting	Firms and their stakeholders are increasingly embracing the importance of disclosing and reporting non-financial measures of performance related to corporate responsibility. Thus, firms are leveraging sustainability reports to disclose their environmental and social performance. This course is geared toward helping you understand how best to assess, document, manage, report, assure and communicate environmental and social (non-financial) performance via Sustainability Reporting. The course will provide guidance on key concepts, frameworks, standards and best practices for sustainability reporting, assurance and verification.
Sustainability course	MOS	MOS549	GR	GRI Certification	This seminar is comprised of two sections. In the Master Class on GRI Reporting students will Learn About GRI and the GRI Reporting Framework. In the Master Class on Materiality and Stakeholder Engagement students will learn cutting edge skills to identify and prioritize material issues (social, environmental and economic) of concern to various stakeholders following the GRI reporting framework. These Master Classes are joint efforts by GRI's Certified Training Partners ISOS Group and BrownFlynn. This seminar is available to all graduate-level students as a one credit hour elective. In addition to one course credit, it also will result in an official Global Reporting Initiative (GRI) Certification.
Includes sustainability	ORLD	ORLD565	GR	Future-Focused Leadership	This course focuses on the competencies necessary to be a future-focused leader. Students will learn how to think about the future, in terms of visioning, scenario planning, and systems thinking. As a key component of the course, strategic elements will be introduced. In addition, students will learn the value of creativity and innovation in developing a future-focused approach of leadership. As a component of the course, students will be asked to develop a future-focused vision for their work unit or organization.
Includes sustainability	ORLD	ORLD575	GR	Contem Issues in Leadership	This course will be focused on contemporary issues in leadership. Students will use cases and recent scholarly and popular press media to explore some of the issues at the forefront of leadership, such as ethics, followership, and leadership assessment. This course will be designed as a way to spark advanced discussion on the topic of leadership, allowing students to go more in depth into contemporary leadership topics and paradigms. Students will produce a reflection paper focuses more in depth on one of the topics covered in the course.
Includes sustainability	PHIL	PHIL342	UG	Environmental Ethics	This course will survey a number of environmental problems, looking at philosophical and ecological approaches to the issues. Topics may include: the moral status of animals, plants, ecosystems and species: poverty vs. the environment; global justice; consumerism; motivating people to care for the environment; mass extinctions; global climate change. Prerequisites: PHIL 105 and 205.
Includes sustainability	POLS	POLS151	UG	Politics of the Developing World	This course is an introduction to the domestic politics of developing countries in Africa, Asia, Eastern Europe, and Latin America. Topics include democracy and authoritarianism, economic development, political conflict, the role of political institutions, and political culture.
Includes sustainability	POLS	POLS360	UG	Problems of Globalization	This course explores the political, economic, and cultural dimensions of globalization. It examines the following key question: What causes globalization? What are its effects? How can countries cope with these effects? Other topics examined include, state autonomy, the democratic deficit, the IMF and WTO, equity, cultural imperialism and social justice.
Includes sustainability	POLS	POLS362	UG	International Organization	Nature of the international legal system, application of international law; sources, major legal issues and how the system copes with them; state territory; nationality; jurisdiction; international agreements; state responsibility; international claims.
Includes sustainability	POLS	POLS462	UG	Global Diplomacy	This course examines diplomacy used by international actors to address the problems confronting international society. Problems addressed include peace and security; the maintenance of order in the world; economic stability; sustainable development; and the protection of human rights, the environment, and global social justice. Pre-requisite: prior IR class.
Includes sustainability	POLS	POLS484	UG	Inquiry: Politics of Health	Course offers students political and analytical insights into understanding health policy issues in the U.S. and developing world. It examines how power relations and values affect choices on health issues. Of particular interest in this course is the AIDS pandemic in Africa. Prequisite: Methods or permission of instructor
Includes sustainability	POLS	POLS485	UG	Inquiry:Politics of the Future	This course examines the gap between the "is" and the "ought" of political systems, and portrays the politics of the future as emerging from human choice based on core values. Students will then construct their own future systems based on their core values. Prerequisite: Methods or permission of the instructor.
Includes sustainability	POLS	POLS555	GR	Politics of Econonmic Development	This course undertakes an advanced study of the development of the modern state and of how states interact with various other forms of political community as well as with markets and other states. Students examine how ongoing processes of economic globalization have rendered the concept of "the state" problematic.
Sustainability course	POLS	POLS562	GR	Global Diplomacy	The course is concerned with the kind of diplomacy that enables international actors to address the problems confronting international society: problems addressed include peace and security; the maintenance of order in the world; economic stability; sustainable development; and the protection of human rights, the environment, and global social justice.
Includes sustainability	POLS	POLS585	GR	Politics of the Future	This course examines the gap between the "is" and the "ought" of political systems, and portrays the politics of the future as emerging from human choice based on core values. Students will then construct their own future systems based on their core values. Prerequisite: Methods or permission of the instructor.
Includes sustainability	PPS	PPS200	UG	Gov't & Politics of City & Sub	Political, social, and economic aspects of the contemporary American city and its suburbs; public policies aimed at solving major urban problems. Offered occasionally.
Includes sustainability	PPS	PPS300	UG	Current Urban Pol and Gov Prob	Identification and analysis of current problems, political, and governmental, affecting the citizens of American cities, their suburbs, and metropolitan regions. These problems are analyzed within their appropriate social and economic contexts, and the range of programmatic interventions, whether public or private, is examined. Offered occasionally.
Includes sustainability	PPS	PPS397	UG	Metropolitan Environment	An interdisciplinary course presenting the political, social, economic, educational and religious dimensions of metropolitan areas. Socio-demographic trends and methods for analyzing neighborhoods will be discussed. The political and governmental system with an emphasis on its state and local manifestations will be presented. These topics will be explored against the background of cultural diversity which exists in society.
Sustainability course	PPS	PPS400	UG	Politics and Ecology	Current environmental issues and their impact upon metropolitan areas. Legal, political, social and economic perspectives on selected problems such as energy and natural resource use, air and water pollution, and land use and economic growth. Offered alternative Spring semesters. x PPS408 Analysis of the economic dimensions of poverty and income distribution. Welfare reform policies and employment and training policies are examined. Offered alternate Fall semesters.
Includes sustainability	PPS	PPS408	UG	Urban Issues:Poverty & Unemplo	Analysis of the economic dimensions of poverty and income distribution. Welfare reform policies and employment and training policies are examined. Offered alternate Fall semesters.
Includes sustainability	PPS	PPS410	UG	Intro to Urban Economics	Analysis of the factors determining the economic growth of urban areas. Economic considerations relevant to selected urban problems such as poverty, unemployment, housing, and transportation. Offered occasionally.
Includes sustainability	PPS	PPS411	UG	Urban Emplymnt & Trainng Pol	Manpower utilization in an urban area, Government and industry approaches to improving labor force utilization, employment training and development. Offered occasionally. Manpower utilization in an urban area, Government and industry approaches to improving labor force utilization, employment training and development. Offered occasionally.
Includes sustainability	PPS	PPS415	UG	Intro to Public Finance & Budg	Revenue and expenditure patterns of American governments. Various methods of public budgeting. Public securities and debt financing of state and local governments. Offered occasionally.
Sustainability course	PPS	PPS420	UG	Urban Ecology: Comm & Neighbor	Explores methods and theories which contribute to understanding urban neighborhoods and communities and addresses the question how people do community. Offered occasionally. Explores methods and theories which contribute to understanding urban neighborhoods and communities and addresses the question how people do community. Offered occasionally.
Includes sustainability	PPS	PPS432	UG	Administrative Law	Course introduces students to the legal behavior of administrative agencies in the American political system. Covered are administrative law doctrines, principles, and case law. Specific focus is on such topics as rule-making, adjudication, administrative discretion, judicial review, tort liability, and administrative searches and seizures. Offered occasionally.
Includes sustainability	PPS	PPS536	GR	Science, Tech, & Public Policy	Focus is on the impact of science and technology (particularly information technology) on public organizations, public policy, and society. The course is designed for those who work with or want to understand the dynamics such technology introduces into organizations. Offered every Spring semester.
Includes sustainability	PPS	PPS540	GR	Organizational Theory & Behavi	General focus is on theories and schools that provide insights into organizational life. Emphasis is given to public bureaucracies. Topic include motivational theory, management behavior. Policy evaluation and the like. Offered every Fall semester.

Saint Louis University Sustainability Courses

Type	Dept	Course ID	Level	Title	Description
Includes sustainability	PPS	PPS550	GR	History of Cities & Planning	Analysis of the origins, growth and decline of selected cities of Europe (e.g. Athens, Rome, Paris, London) and America (e.g. Boston, Savannah, St. Louis, Chicago) during major historical periods (e.g. Medieval, Renaissance, Industrial Revolution, Post-Industrial). The influence of design trends and planning on the built environment will be analyzed where appropriate. Offered every year.
Includes sustainability	PPS	PPS570	GR	Health Policy	A course in health policy for advanced graduate students. The purposes of the course are to orient the students to the policy process, to increase the student's understanding of the nature of health policy making and health politics and to provide the student with an opportunity to develop an indepth understanding of current health care issues. Offered every year.
Includes sustainability	PUBH	PUBH201	UG	Introduction to Global Health	This course introduces students to the concepts of public health by tracing its historical evolution. By using classic public problems and their resolutions, the philosophy, values and mission of public health are examined. The trends in global health such as epidemic responses, disease-specific programs, funding mechanisms, and capacity-building are discussed.
Includes sustainability	PUBH	PUBH235	UG	Contemp Issues in Global Hlth	This course explores biological, environmental, social, and political factors impacting the health of populations across the globe. Topics covered will change depending on current events, but will likely include: environmental degradation, climate change, biosecurity, health education in diverse populations, and chronic and infectious diseases.
Includes sustainability	PUBH	PUBH365	UG	Public Health & Social Justice	Health has special more importance for the well-being of individuals and populations. We will discuss ethical issues associated with economic measures, resource allocation, priority setting, and human rights. The course is designed to evoke thoughts on personal and institutional responses to the questions of social justice and health.
Includes sustainability	PUBH	PUBH371	UG	Evidence Based Public Health	This course introduces students to approaches for developing and selecting public health interventions and evaluating their efficacy from a scientific perspective. With examples taken from health systems around the world, students learn how to access and interpret data systems and analytical methods and apply public health evidence to public policy making. This course will address the challenges of translating and disseminating research discoveries into communities.
Includes sustainability	PUBH	PUBH420	UG	BIOL Basis of Public Health	A basic understanding of public health biology is the cornerstone upon which rest the five core disciplines. A unique characteristic that differentiates public health from other social movements or social action is its grounding in science. The biological aspects of humans, microorganisms, and other factors such as physical environment will provide insight into this important relationship.
Includes sustainability	PUBH	PUBH462	UG	Politics & PH Health Advocacy	Public health is inherently a political discipline. Practitioners require an understanding of the way public opinion and legislation on matters of public health are shaped. This course exposes students to the basics of public health policy, coalition-building, written and verbal advocacy tools, and includes several real-world experiences of advocacy work.
Includes sustainability	PUBH	PUBH495	UG	Global Health Field Experience	This course provides students with: 1. the background to anticipate, insofar as possible, what they might experience during an international health trip; 2. the knowledge to draw upon to make the trip more beneficial for them and the people they encounter; and 3. the opportunity to reflect constructively on the experience when they return.
Includes sustainability	PUBH	PUBH501	GR	Foundations Public Hlth Pract	This course introduces students to the context of public health practice, including its legal basis, history, mission, the core functions of public health, and institutional structure of public health practice. Theoretical and practical perspectives are presented to illustrate the workings of public health at local, state, and national levels.
Includes sustainability	PUBH	PUBH502	GR	Ethical Issues in Public Hlth	Through readings, lectures, discussions, and case studies, students develop: (1) knowledge of the basic ethical concepts operative in medical and public health ethics; (2) understanding of current ethical challenges facing those engaged in health promotion, disease prevention, and epidemiologic research; and (3) the ability to articulate ethical challenges and to make critical and informed ethical decisions. (Offered annually.)
Includes sustainability	PUBH	PUBH561	GR	Remote Sensing in Public Hlth	This introductory course emphasizes the use of remote sensing techniques and methods as tools are applied to understand infectious disease and environmental health interactions. The goal of this course is to give students a combination of theoretical background, examples of applications in the literature and hands-on experience in using remote sensing hardware and software. This course will provide an introduction to the basics of remote sensing, focusing on analyzing and addressing public health issues. It is intended for graduate students and will provide information and experience to understand the basic concepts, language, and methodologies of remote sensing as related to the issues of concerns to public health professionals. It will provide a platform of knowledge and expertise from which informed decisions concerning the application of remote sensing methodologies and interpretations can be " made. This course will not produce remote sensing" experts in the public health arena; however, individuals who understand the concepts, can frame pertinent questions, and coordinate with remote sensing analysts or spatial scientists to investigate and solve public health questions.
Includes sustainability	SOC	SOC218	UG	Cities and Space	This course familiarizes students with the concepts of urbanization, with a focus on cities in the context of globalization. The class will also focus on urban processes and politics with an emphasis on processes of immigration and citizenship. Students are evaluated through written projects on themes discussed in the " course. No prerequisites "
Sustainability course	SOC	SOC327	UG	Environmental Anthropology	This course examines current ecological problems and conservation/management efforts around the world, and combines case studies with classic anthropological theory to explore the ethical, cultural and biological ramifications of habitat use and environmental change. Topics include population growth, large-scale development, biodiversity conservation, sustainable environmental management, indigenous groups, consumption, and globalization.
Sustainability course	SOC	SOC420	UG	Urban Ecology: Neighborhoods	Explores methods and theories which contribute to understanding urban neighborhoods and communities and adresses the question, "how people do community."
Sustainability course	SOC	SOC454	UG	Environmental Impact	This course examines the social, economic and environmental dimensions of sustainability in cities around the world. Also examined are policies and opportunities to address the challenges of sustainability from both developed and developing countries.
Includes sustainability	SOC	SOC520	GR	Urban Ecology: Neighborhoods	The objective of this course is to introduce students to the theories, empirical research and methodologies on residential segregation and neighborhood change in American urban cities. The course beings with an overview of the major theories of neighborhood transitions, (e.g. the Chicago School's ecological models of neighborhood invasion-succession models, spatial assimilation theory, etc.) Next, theories of racial residential segregation are examined, with an emphasis on African Americans and other racial/ethnic minorities. Case studies of neighborhoods in Boston, Chicago, St. Louis, New York, Oakland, and Philadelphia are used to illustrate changes in neighborhood racial/ethnic composition and characteristics during the twentieth century. The final part of the course focuses on the consequences of residential segregation, particularly with regards to income, school, and " health inequality. A major focus of the course is" the research paper. Students are required to write a final research paper based on their neighborhood study. Students will work in teams to carry out the ethnographies, but each students is expected to write his or her own paper. Students are also expected to integrate data from other methodologies covered in the course as " well. "
Sustainability course	SOC	SOC554	GR	Environmental Impact of City	This course examines the social, economic and environmental dimensions of sustainability in cities around the world.
Sustainability course	SWRK	SWRK810	GR	Urban Ecology: Comm. And Nei	Ecology is the study of the relationships of species to enviroments. Human ecology is the study of the characteristics of spatially defined communities and the spatial arrangements of land uses within these spatially defined communities. This approach arose at the University of Chicago during the early part of the 20th Century and enjoyed great popularity in academic circles until the 1950's. This course will explore the methods and theories that contribute to our ecological understaning of urban neighborhoods and communities.
Sustainability course	SWRK	SWRK814	GR	Urban Economic Development	This course examines factors determining business, industrial and commercial location, techniques used in analyzing metropolitan growth and methods used ny industrial development organizations to attract business firms. (Generally offered in fall semester.)
Includes sustainability	THEO	THEO368	UG	Green Discipleship	This course explores what the Christian theological tradition teaches about how humankind ought to be relationship with the rest of creation. Focus will be on, but not limited to, Christianity and on key theological themes and perspectives while also seeking to discern possible promising foundations for responding to ecological concerns.
Includes sustainability	UPD	UPD500	GR	Urban and Regional Development Theory	This course explores the literature on regional development theories. We will examine the factors that contribute to the growth or decline of city-focused regions. Readings pull from planning, economic geography, sociology, and urban studies to explain the spatial, industrial, and people-focused patterns of development in regions. (Offered every fall.)
Includes sustainability	UPD	UPD501	GR	Research Methods	In this class, we will explore the basic methods used in planning and policy analysis. Whether as an urban planner or private developer/consultant, we all encounter policy reports and documents and are required to decipher them at some point in our careers. Many of us will also write these reports or use them as source material for grant proposals or funding requests, thus understanding the methods is essential to our work. This course provides the foundation for planning and policy analysis, examining the basic methods used in addressing planning and development problems. (Offered every fall.)
Includes sustainability	UPD	UPD510	GR	Local Economic Development Policy and Practice	This course provides an introduction to the context, theory, process, and practice of local economic development planning. Topics covered include theoretical and conceptual explanations of the economic development process; international, national, and regional factors affecting local economic development; federal, state, and local roles; contrasting economic development approaches and methods for planning and practice; equity, participation, and partnerships in economic development; and financing tools for local economic development. (Offered every spring.)

Saint Louis University Sustainability Courses

Type	Dept	Course ID	Level	Title	Description
Includes sustainability	UPD	UPD515	GR	Real Estate and Economic Development	The purpose of this course is to teach students the basics of development planning, with a focus on the public sector planner/economic development role. The desired result is to provide the students an overview of both subjects so that those going into either the related public or private sector fields have a broad background of how development projects and public economic development initiatives work within the context of the public process.
Includes sustainability	UPD	UPD525	GR	Infrastructure Planning and Process	This course explores various systems and services that support a city and region and how function. How are they financed? How do they interact with other systems? These include all systems and services that engage in some planning function, including transportation, water, sewer, and schools. (Offered every spring.)
Includes sustainability	UPD	UPD530	GR	Theory and Foundations of Planning	This course introduces the multiple facets of city/urban/regional planning, examining the context, theory, process, and ethical practice of planning and policy. It considers the roles that urban planners play in analyzing and shaping cities and their component communities and the issues and dilemmas communities face when engaged in the planning process. Through this course, students develop a theoretical and practical understanding of urban spatial structure and the peculiar function of urban areas and an operational understanding of the urban planning process. While we will emphasize problems and challenges currently facing communities in metropolitan St. Louis, we will examine the broader issues affecting communities and regions across the US and the world. (Offered every spring.)
Includes sustainability	UPD	UPD531	GR	Land Use Planning and Analysis	This course provides students with an overview of how land use decisions are made and activities involved in land use planning. Starting with the history and theory of land use planning, this course develops a conceptual framework for how-the often controversial decisions are made, exploring the issues from the perspectives of the public and the private sectors. Students examine values and objectives behind the different approaches to land management and the role that the local government plays in establishing a land use program. Students also consider the necessary information required to develop a land use plan, examining the different types of data and how they might be used. Students ultimately examine land use practices at the site level, exploring development issues for a series of specific land uses. Following this class, students will have the necessary analytical skills to examine a series of land use development issues. (Offered every spring.)
Includes sustainability	UPD	UPD533	GR	Real Estate Finance	The course provides practical working knowledge and capabilities in the methods and techniques used in the financial analysis of real estate development projects. We will spend the majority of our time understanding, practicing, and applying present-value mathematics, the concept of return, discounted cash flow analysis, project cost and benefits, and a complete financial analysis of a real estate development project. We will develop Excel spreadsheet capabilities and use them in all the analysis steps. Finally, we will review the loan process for commercial real estate projects. This course provides a hands-on approach to real estate finance and emphasizes the knowledge and analysis required for direct investment in real estate projects. This course will provide the skills necessary to evaluate potential opportunities in real estate. (Offered every fall.)
Includes sustainability	UPD	UPD534	GR	Community Development Finance	This course provides students with conceptual and practical tools needed to participate in the decision-making for and financing of projects, including commercial real estate, that relate to community development goals. The course introduces students to the policy and practice of community development finance, with an emphasis on the resources available to assist for-profit and not-for-profit private sector developers to undertake community development projects in markets and with populations outside of the financial mainstream. The course will include the fundamentals of decision-making about the financing of community development (i.e. real estate loan/investment underwriting), development goals, such as the building of affordable housing, community facilities, charter schools and commercial real estate development. Topics covered with include Community Development Block Grant, HOME Investment Partnership funding, Low Income Housing Tax Credits, Tax-Exempt Bond Financing, New Markets Tax Credits, and others.
Sustainability course	UPD	UPD543	GR	Environmental Planning	This course is designed to present the concepts and frameworks used for environmental planning. This course will present both the contexts within which environmental planning takes place and the frameworks, tools and substantive knowledge with which environmental planners plan. The course uses examples from urban, metropolitan and regional environmental settings.
Includes sustainability	UPD	UPD544	GR	Planning and Development Studio	The course provides practical working knowledge and capabilities in the methods and techniques used in the financial analysis of real estate development projects. We will spend the majority of our time understanding, practicing, and applying present-value mathematics, the concept of return, discounted cash flow analysis, project cost and benefits, and a complete financial analysis of a real estate development project. We will develop Excel spreadsheet capabilities and use them in all the analysis steps. Finally, we will review the loan process for commercial real estate projects. This course provides a hands-on approach to real estate finance and emphasizes the knowledge and analysis required for direct investment in real estate projects. This course will provide the skills necessary to evaluate potential opportunities in real estate. (Offered every fall.)
Sustainability course	UPD	UPD548	GR	Sustainability and the Built Enviornment	In 1987 the World Commission on Environment and Development (aka the Bruntland Commission) was convened to address the growing concerns about environmental degradation in light of escalating human development. From that came the call to switch the world policy focus toward a more sustainable future. Sustainable development is most commonly defined as meeting the needs of our present generation while taking the needs of the future generation into consideration. The concept appears simply. Yet, the challenge lies in how we get there. What does it mean to meet the needs of our present generation? How do we define those needs? And what does it mean to take the needs of a future generation into consideration at the same time? What does all of that look like? There in lies the policy challenge. As we enter the second decade of the 21st century, the world looks vastly different from the time when these conversations about sustainable development began. Even within the past year, the policy frame has changed dramatically, suggesting that there is room for expanding the sustainable development discourse. In this course we explore those questions at the global, national, and local scale.
Sustainability course	UPD	UPD549	GR	Sustainable Site Planning	This course covers fundamental sustainable site issues such as planning and policy strategies for sustainable communities; site planning with nature – using site analysis to design with nature, not against it; urban agriculture – growing food for sustainable cities and healthy people; soils – protecting - enriching, and valuing soils and the life within them; hydrology and the water cycle - design for water cycling and water conservation; vegetation and landscaping - nutrient cycling, food, wildlife habitat, climate mediation
Includes sustainability	UPD	UPD560	GR	Planning and Development in St. Louis	This course examines the major demographic, economic and social trends that have characterized St. Louis . It will be relevant to those with an interest in city planning and community development, but also urban history, economic development, housing and related topics. Students will study plans and projects, some of which were implemented and some not. The intent is to examine the ingredients of successful plans, programs and projects; appreciation for the consequences (both intended and unintended) of development decisions; and a better understanding of the city and the region.

Sustainability courses	**44**
Undergraduate	22
Graduate	22

Includes sustainability	**260**
Undergraduate	142
Graduate	118

Total courses **304**

ACCT	1	**LAW**	2
BIOL	31	**MENG**	2
CHEM	3	**MGT**	6
CVNG	6	**MKT**	2
DIET	4	**MORL**	1
DSCI	10	**MOS**	7
EAS	109	**ORLD**	2
ECE	2	**PHIL**	1
ECON	7	**POLS**	9
EOH	3	**PPS**	14
GIS	13	**PUBH**	10
HADM	5	**SOC**	6
HMP	28	**SWRK**	2
IB	2	**THEO**	1
IDE	1	**UPD**	14