Sustainability

Sustainability seeks a way for human and natural systems to work together so that all species can survive and thrive over the long-term from the local to global scales. The Bachelor of Science in Sustainability provides the broad fundamental knowledge, skills and competencies to drive sustainable outcomes that address today's urgent environmental, economic and social challenges. This degree can be applied across a wide range of fields: from management, design and planning, to environmental services in business, nonprofit and public institutions.

Required core courses provide a foundation in sustainability principles and strategies, applications in practice, environmental science, environmental law and policy, sustainability businesses, and systems thinking, culminating in an independent capstone project. Electives are drawn from a range of courses in Arts & Sciences that reflect the breadth of sustainability applications. Faculty are educators and practitioners with deep knowledge and experience in applying sustainability. The program addresses the collaborative and integrative nature of sustainability with an emphasis on applied learning — taking the lessons from the classroom into St. Louis.

In addition to core requirements, students complete their degree with 18 additional units. Students may choose from three concentrations or select electives tailored to their interests. The concentrations include:

- **Sustainable Environment and Science:** a focus on the environmental aspects of sustainability
- **Sustainable Management and Organizations:** a focus on understanding and applying sustainability in corporate and institutional management
- **Urban Sustainability:** a focus on urban-scale sustainability policies and programs

**Degree Requirements**

**Bachelor of Science in Sustainability**

**Required Core Courses:** 18 units

All University College undergraduate students must satisfy the same general-education requirements (http://bulletin.wustl.edu/undergrad/ucollege/bachelors/#degreerequirements).

Requirements specific to the BS in Sustainability include:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>SUST 205</td>
<td>Foundations and Practice of Sustainability</td>
<td>3</td>
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<tr>
<td>SUST 328</td>
<td>Environmental Law: Applications Toward Sustainability</td>
<td>3</td>
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<td>Bus 364</td>
<td>Strategic Planning</td>
<td>3</td>
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<tr>
<td>SUST 368</td>
<td>Sustainability as Transformative Agent in Business and Public Policy</td>
<td>3</td>
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<tr>
<td>Bio 413</td>
<td>Environmental Science: Regional and Global Perspectives</td>
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<td>SUST 450</td>
<td>Sustainability Capstone</td>
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<td><strong>Total Units</strong></td>
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**Sustainable Environment and Science Concentration**

**Required Courses:** 18 units

A concentration in sustainable environment and science is a good foundation for careers in environmental fields such as environmental manager, landscape manager, waste manager, or for those interested in pursuing an advanced degree in a related field of interest.

Students will select among electives based on approved available course offerings in consultation with their adviser. Examples of those include:

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<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>GIS 200</td>
<td>Introduction to GIS</td>
<td>3</td>
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<tr>
<td>or GIS 303</td>
<td>Digital Cartography</td>
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<tr>
<td>PolSci 3312</td>
<td>Environmental and Energy Issues</td>
<td>3</td>
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<tr>
<td>Anthro 3795</td>
<td>Anthropology and Climate Change: Past, Present, and Future</td>
<td>3</td>
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<tr>
<td>Bio 419</td>
<td>Ecology</td>
<td>3</td>
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<tr>
<td>Bio 4631</td>
<td>Urban Agriculture and Sustainable Food Systems</td>
<td>3</td>
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**Sustainable Management and Organizations Concentration**

**Required Courses:** 18 units

A concentration in sustainable management and organizations is a good foundation for careers in the business or institutional applications of sustainability such as sustainable project manager, facilities manager, materials manager or for those interested in pursuing an advanced degree in a related field of interest.

Students will select among electives based on approved available course offerings in consultation with their adviser. Examples of those include:

Urban Sustainability Concentration

Required Courses: 18 units

A concentration in urban sustainability is a good foundation for careers in urban-scale public policy and programs such as community manager, planning consultant, nonprofit manager or for those interested in pursuing an advanced degree in a related field of interest.

Students will select among electives based on approved available course offerings in consultation with their adviser. Examples of those include:

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>Bus 224</td>
<td>Introduction to Project Management</td>
<td>3</td>
</tr>
<tr>
<td>Bus 290</td>
<td>Design Thinking: Human-Centered Approaches to Making the World</td>
<td>3</td>
</tr>
<tr>
<td>Bus 303</td>
<td>Introduction to Supply Chain Management</td>
<td>3</td>
</tr>
<tr>
<td>Bus 339</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>Econ 355</td>
<td>Environmental Economics</td>
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</tbody>
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Degree in Sustainability (No Concentration)

Required Courses: 18 units

Students will select among Sustainability electives, including all courses offered in the concentrations.

Additional Information

Undergraduate and graduate degree and certificate programs offered through University College are not offered by the Olin Business School at Washington University and do not come under the accreditation responsibility of the Association to Advance Collegiate Schools of Business (AACSB). No more than 25 percent of course work applied to a Bachelor of Science in University College may be in business disciplines.

Courses


U19 SUST 106 Introduction to Political Theory

This course offers an undergraduate-level introduction to the field of political theory. We will focus on three major themes — social justice, power and freedom, and democracy — reading some canonical texts, such as Bentham's *Introduction to the Principles of Morals and Legislation* and Marx's *Capital*, but emphasizing contemporary works, such as those of John Rawls, Michael Walzer, Michel Foucault, and Robert Dahl.

Credit 3 units. BU: BA

U19 SUST 107 Environmental Geology and Energy

Environmental impact of current energy sources and potential for alternative energy sources. Energy production effects on global climate change. Interplay of natural and human-induced climate change. Fossil fuel sources and uses. Nuclear power generation and problems with nuclear waste disposal. Examination of proposed disposal sites. Alternative energy sources, including solar, wind, geothermal, and hydrogen, compared to fossil fuel and nuclear power use. Intended for non-science majors.

Prerequisites: none.

Same as U13 EPSc 107

Credit 3 units.

U19 SUST 121 Introduction to Global Climate Change

Global climate and global climate change and their impacts on life and civilization. Integrated view of global climate and the diverse forces that can alter global climate. Historical and potential future consequences of global climate change on human life, our industrial civilization, and its sustainability.

Same as U13 EPSc 121

Credit 3 units. UColl: OLH

U19 SUST 146 Introduction to Energy, Environmental and Chemical Engineering

Key technical issues that face our society and some of the emerging technologies that hold promise for the future are examined and discussed. Relationship to chemical engineering principles is emphasized.

Credit 3 units.

U19 SUST 200 Introduction to GIS

This course introduces students to the fundamental principles and applications of geographic information systems (GIS), their underlying geospatial science and spatial thinking. This problem-based course explores applications of GIS to spatial questions in the areas of social science, business, the humanities and earth sciences. Example topics include understanding spatial data types; map coordinate systems and projections; basic spatial data analysis; acquiring, editing, creating and managing geospatial data; and processing and visualizing data using GIS. This hands-on course works through problems using (mainly) ESRI ArcGIS software (including ArcMap and ArcCatalog), but other open source tools will also be introduced. Students who complete this course should be able to apply skills to think through a spatial problem and employ GIS tools to address it.

Same as U90 GIS 200

Credit 3 units.

U19 SUST 205 Foundations and Practice of Sustainability

This interdisciplinary course serves as an introduction to sustainability concepts, sustainability practice, and systems thinking. Students in this course will develop and articulate a common understanding of foundational sustainability concepts,
including definitions, global challenges, human impacts, and approaches to sustainability solutions. Students will also start to understand and develop the competencies (knowledge, skills, attitudes) needed for success as a sustainability advocate or practitioner in professional settings, including systems thinking, strategic planning, group collaboration, and communicating the case for sustainability to various and specific audiences.
Credit 3 units.

U19 SUST 209 Introduction to Environmental Studies
This course examines the physical, chemical, and biological components of the environment. We will focus on the ecological principles that are the basis of environmental science. We will then explore how environmental studies incorporate concepts from politics, social sciences, economics, ethics, and philosophy. A central theme of the course is the effect of human societies on the environment, and how individual human and societal behavior can be modified to minimize the deleterious effects on the environment. This course is fully online. Only University College students receive credit for online courses.
Same as U29 Bio 209
Credit 3 units. UColl: OLI

U19 SUST 2352 Introduction to Environmental Ethics
A general survey of current issues in environmental ethics, focusing on problems such as the obligation to future generations, protection of endangered species, animal rights, problems of energy and pollution, wilderness, global justice, and business obligations. Students will also learn some ethical and political theory.
Same as L30 Phil 235F
Credit 3 units. A&S IQ: HUM Arch: HUM Art: HUM BU: ETH EN:

U19 SUST 299 The Study of Cities and Metropolitan America
This course serves as the introductory course analyzing the forces shaping America's cities and surrounding metropolitan areas. It examines, as well, strategies for dealing with many of the profound social issues affecting urban/metropolitan America. Emanating from an historical perspective, it examines the ways in which industrialization and deindustrialization shaped Northern American cities and the consequences of deindustrialization on urban citizenry. It further surveys the demographic and spatial transformation of American cities examining the consequences of urban transformation on federal, state and local politics, on society and on her institutions. Similarly, the course focuses on the origin and societal changes and emerging goals of urban development, gentrification and evolving patterns of metropolitanism and the necessity for central city as well as neighborhood reconstruction. The dynamics of racial residential segregation, crime and punishment, issues of academic achievement and under-achievement, the social cleavages of urban marginalized communities, family structure, urban homelessness, urban sprawl, and health care, among others, are viewed from the perspective of social justice by exploring social, political, economic, racial, and ethnic factors that impact on access, equity and care. Various theoretical perspectives and philosophies are introduced that have dominated the discourse on race and urban poverty. A field-based component complements the course work, and is designed to build interest, awareness and skills in preparation for outreach to urban communities. Prerequisite: sophomore standing.
Credit 3 units. BU: BA

U19 SUST 303 Digital Cartography
In today's world, it is imperative that students develop the necessary skills to communicate their ideas to a large audience in an efficient manner. Graphics and visual representations are one of the most effective ways to neatly convey complex data sets to readers. This course presents both theoretical and hands-on mapping and graphical problems to students. Students will learn to solve these problems with self-created solutions. The course teaches students the basics of GIS-based mapping for producing publishable work. Students will develop basic skills in computer-aided mapping and computer drafting primarily using ARCGIS, Adobe Illustrator, Adobe Photoshop, and Microsoft PowerPoint. Students will also be introduced to other mapping or statistical programs as needed.
Same as U90 GIS 303
Credit 3 units.

U19 SUST 315 Introduction to Historic Preservation
This course explores the history and practice of historic preservation with an emphasis on regional urban issues and the way in which historic preservation contributes toward the development of sustainable communities. Students are exposed to a diverse range of preservation topics that will enable them to apply sound historic preservation principles in professional practice. Course topics include: evaluation and recording of historic properties and districts; Secretary of the Interior's standards in the process of planning or designing a project; historic preservation in community planning; application process for state and federal tax credit programs; conservation of historic building materials; historic preservation vs. modern building codes and user requirements. We examine case studies of completed projects or projects in progress.
Credit 3 units.

U19 SUST 317 Urban Ecology: Principles and Practice
More than half of the world's population now lives in an urban environment. Studies have shown that connecting to nature can benefit people, and savvy municipalities are attuned to the positive role that ecology can play in the urban core. How can people and nature co-exist in ways that are mutually beneficial? In this intensive course, students will examine multiple techniques and applications of urban ecology. Class time will be used to review and discuss urban ecology principles from the readings and visuals. Local excursions — such as to Forest Park, Citygarden and Cortex — will present opportunities to personally experience urban ecology practices. Students will be expected to make their own field trip arrangements, but assistance will be provided with public transportation options. As their final course project, students will develop an urban ecology project proposal and design. The course is designed as an urban ecology overview and foundation — (1) What urban ecology is: underpinning and forerunners in the field, (2) Why urban ecology is important: potential benefits (social, economic, environmental), (3) How urban ecology is being applied: implementation techniques and approaches.
Credit 3 units.

U19 SUST 318 The Business of Sustainability
From manufacturing to education, agriculture to retail, sustainability has become a key element of current business practices. Using sustainability's triple-bottom line focus on social, environmental and financial impacts, businesses are addressing common challenges related to the costs, metrics, organizational values and practices. Key business concepts in the course
include the economics of organizations, sector analysis, stages of business growth, operations and the dynamics of mission driven organizations. Five business sectors — food-based businesses, sustainable production, environmental services, energy businesses and sustainable community development — will be used to provide examples of the challenges and opportunities of applying principles of sustainability to current or new businesses. This course will be especially useful for students considering careers in sustainability.

Credit 3 units.

**U19 SUST 319 Planning Sustainable Communities**

While the media bombards us with talk of sustainability and things "green," just what does it mean to be sustainable and how is it obtained? This course will discuss what sustainability means, the dimensions of sustainability, and various approaches for achieving sustainability. Its primary goal is to introduce students to the process of producing a sustainability strategic plan for a neighborhood, city, or region. Students will learn how to prepare a baseline sustainability analysis, generate community sustainability goals, formulate sustainability implementation tactics, and devise assessment measures. The course will examine best practices in planning for sustainability from around the country and around the world, but will use St. Louis as a case study in studying current techniques and theories in planning for sustainability.

Credit 3 units.

**U19 SUST 325 Introduction to Resilience**

Resilience signifies the capacity to adapt to changing conditions and to maintain or regain functionality and vitality in the face of disturbances whether natural (such as tornadoes, hurricanes, earthquakes) or man-made (such as civil unrest, economic downturn, aging infrastructure). This course will explore multiple aspects of resilience from social, environmental and infrastructure perspectives. Social resilience reinforces the role of communities in building resilience, environmental resilience examines the role of natural systems to serve as mentors for resilience, and infrastructure resilience looks at the role of built structures and systems in fostering resilience. We will examine common attributes that build resilience across different perspectives (social, environmental, infrastructure) and settings (e.g., city, neighborhood, building). Resilience and related course themes apply to a wide range of disciplines and experiences — environmental studies, history, urban planning, business, political science, design, to name a few — and students will be guided to apply course skills and strategies to their own interests and goals.

Credit 3 units.

**U19 SUST 328 Environmental Law: Applications Toward Sustainability**

This course provides an overview of significant environmental legal and policy issues. It will be taught from a sustainability practitioner's perspective, linking environmental law to sustainability applications. The content touches on both environmental hazards and natural resource issues, and they will be discussed within the scope of both a legal and sustainability framework. The goal of the course is to provide the students with a general understanding of numerous environmental issues — such as they might encounter in the field of sustainability — and to help them develop the knowledge and tools that will be useful in addressing those environmental issues.

Credit 3 units. UColl: OLI

**U19 SUST 329 The Metropolis**

While some humans have lived in cities for six thousand years, the world has experienced a metropolitan revolution over the last two centuries. Close to one half of the world’s population now lives in a city, suburb, or exurb. Today’s metropolises are not only larger than ever before, they are much more complex. This course examines key seminal works that analyze the past, present, and future of this evolution. It discusses key theorists who have explored the history of the urban form; the nature of socioeconomic and political metropolitan structures; the transformation of the built environment of the city; contemporary urban policy; and the future of the metropolis on a global scale.

Credit 3 units.

**U19 SUST 3312 Environmental and Energy Issues**

This course considers the major issues in these increasingly important areas of public policy. We discuss the importance of political processes and actors on such phenomena as global warming, endangered species, and public lands. This course emphasizes the American experience but also considers international implications.

Same as U25 PolSci 3312

Credit 3 units. UColl: PSA

**U19 SUST 332 Conservation Biology and Biodiversity**

This overview of the fields of conservation biology and biodiversity covers topics such as species preservation, habitat restoration, refuge design and management, and human population growth. Does not count for day, undergraduate biology majors. This is a fully online course. Only University College students receive credit for fully online courses.

Same as U29 Bio 432

Credit 3 units. UColl: OLI

**U19 SUST 3322 Sustainability Policy**

Same as U25 PolSci 3322

Credit 3 units.

**U19 SUST 343 Managing LEED Certification**

This course provides in-depth instruction on how to effectively manage the documentation process and project team from Charrette to certification. Emphasis will be placed on integration of design, establishing environmental goals, LEED registration/certification process, and construction phase implementation.

Credit 3 units.

**U19 SUST 344 Global Development and Sustainability**

This course examines those activities, public and private, designed to bring a greater quality of life to an area, region or country and the people living there. While broad in scope, the discipline of Development can be focused in four ways. The first and broadest is economic development and in particular foreign aid, economic interventions, and the rise of the multinationals. The second focus looks at the cultural dimensions of development and in particular globalization, indigenous cultures, and the development of the new localism. The third explores the political dimensions of development with a particular attention to the systems and models of local, national and regional politics. The fourth analyzes the technological dimension of development with special emphasis on agricultural and communications technologies. By looking at how the field of global development has shifted toward sustainability, we
will study principles and practices of sustainable development, particularly in the context of global challenges, exploring these economic, cultural, political, and technological dimensions. We will apply models and methods to contemporary cases in first, third, and second world cultures that involve business, government, nonprofit organizations, and NGOs.

Credit 3 units.

**U19 SUST 345 The Art and Science of Living Sustainably**
This is a course on responsible decision making for sustainable living, at home, at work, in our communities, and worldwide. We will examine sociological theories and applications in relation to environmental, economic, social, and organizational questions associated with systems thinking and sustainable development. Our study considers a range of cultural, literary, religious, ethical, scientific, and anthropological perspectives. We read essays by Henry David Thoreau, John Muir, John Burroughs, Rachel Carson, Paul Ehrlich, and Barry Commoner, along with other influential works on conservation and sustainability such as *Changes in the Land: Indians, Colonists, and the Ecology of New England; This Sacred Earth: Religion, Nature, Environment; Reweaving the World: The Emergence of Ecofeminism; and Materials Matter: Towards a Sustainable Materials Policy*. We review case studies of sustainability programs in communities, business, government, and international development that illustrate successful integration of social responsibilities with operational and technical strategies for sustainable growth. This class utilizes carbon footprint calculators, sustainability assessments, practical solutions and tools, personal Best Practices for Sustainable Living, and a fact-finding field trip. No previous study in this topic required.

Credit 3 units.

**U19 SUST 3463 Global Health Issues**
Same as U29 Bio 463
Credit 3 units. UColl: OLI

**U19 SUST 355 Environmental Economics**
Environmental economics is a subfield of economics concerned with environmental issues, both theoretical as well as applied and public-policy oriented. Central to environmental economics is the concept of market failure, particularly the existence of externalities. Correcting for externalities and crafting acceptable public policy responses will be a central focus of this course. Topics explored will include: consumer theory and valuation; pollution and production theory; environmental protection and welfare; the Coase Theorem; resource management; and economic growth and environmental sustainability. Prerequisite: Econ 1011.

Same as U07 Econ 355
Credit 3 units.

**U19 SUST 358 Systems Thinking and Decision Analysis**
Many of the global challenges we face demand complex thinking, multiple perspectives, critical analysis, and sophisticated models that develop skills and tools for difficult choices. Using current research and best practices in the fields of systems thinking and decision analysis, students in this course will acquire resources, strategies, and tools for making complex organizational and personal decisions.

Same as U44 Bus 358
Credit 3 units. UColl: OLI, OLI

**U19 SUST 362 Practical Applications of Sustainable Design I**
Translation of theoretical knowledge into practical, deployable, and tangible methods. Research of materials, systems, and construction methods, employed in the design and construction of environmentally responsible environments. Conserving resources and maximization of comfort through design adaptations to site-specific and regional climate conditions. Describe how the building responds to local climate, sun path, prevailing breezes, and seasonal and daily cycles through passive design strategies. Design strategies for daylighting, task lighting, ventilation, indoor air quality, views, and personal control systems. Integration of natural systems and appropriate technology.

Credit 3 units.

**U19 SUST 363 Practical Applications of Sustainable Design II**
Credit 3 units.

**U19 SUST 364 Global Sustainability**
Global Sustainability explores our relationship with planet earth. Taking an ecological systems perspective, this course provides students with the knowledge and understanding of the scientific, cultural, social, political, economic, and technological conditions that affect the quality of life on our planet. Due to the cross-disciplinary nature of these conditions and issues, the course will touch on many different subject areas, including ecology, conservation biology, economics, and political science. The overarching theme of environmental sustainability will be interwoven throughout the course. Topics covered include an overview of the global commons, ecosystem integrity and health, the human footprint, biodiversity and human health, the pollution and degradation of the global commons, ecological economics, the international system and environmental politics, resource management, and sustainable development.

Same as U29 Bio 364
Credit 3 units.

**U19 SUST 3641 Strategic Planning**
If you are a new business owner, experienced manager, executive, entrepreneur or nonprofit director wanting to utilize the newest, easy to use and implement, most practical approaches to strategic planning within your organization, these are the tools to begin your journey. Leading-edge strategic planning tools and templates can help your successfully focus your new or existing business or nonprofit on tackling the tough issues of today and the future. The course will emphasize how to create, implement and manage successful change within your organization. Using case studies, industry leaders, text and discussion, we will examine and use fundamental principles and tools that relate to successful strategic planning and decision making. Students will develop written and oral presentation skills in the context of strategic planning; understand how to motivate the organization and, as a capstone project, design and receive feedback on a draft strategic plan for their business, function or board.

Same as U44 Bus 364
Credit 3 units.

**U19 SUST 366 Historic Preservation, Planning, and Sustainability**
This course applies principles of historic preservation to a study of the City of St. Louis (Introduction to Historic Preservation, U19 SUST 315, is recommended). We will look at the physical
development of St. Louis, from its origin to the present, analyze St. Louis as a sustainable community, and explore what it might look like in the future. Emphasis will be placed on the urban landscape and the built environment, both existing and lost, that tells us what St. Louis is and where it might be going. We will study how early development determined what St. Louis looks like today, how comprehensive planning has created both success and failure, how federal policies have created lasting gains and regrettable losses, and how historic preservation is the ultimate sustainable activity that connects our past with the future. Credit 3 units.

U19 SUST 367 Corporate Social Responsibility & Sustainability
Corporate Social Responsibility (CSR) is an increasingly important dimension of corporate structure and governance as companies struggle to do well and to do good. Examples in recent years include Nike, BP, Walmart and Coca-Cola; all who have faced criticism for gaps in their CSR approach prompting significant company changes. Organizations use CSR to govern resources use, vendor relationships, human resource practices, philanthropic practices, sustainability standards, and environmental impact. This course traces the historical development of CSR to show how organizations form policies and practices in the areas of human rights, labor standards, the environment, health and wellness, anti-corruption, and economic responsibility. In particular, we study the central role of sustainability in CSR, looking at sustainability scoreboards, employee engagement, organizational structures, and resource tracking. Credit 3 units.

U19 SUST 368 Sustainability as Transformative Agent in Business and Public Policy
This course examines how sustainability drives and is driven by public policy and business. Participants will acquire skills and techniques to apply sustainability in the marketplace, concentrating on public and business organizations. We will explore how profit drives sustainability as a business practice and whether it assists or interferes with public policy objectives around environment, public health, jobs, social mobility, and economic development. As a culminating project, students will develop a sustainability proposal either for government or the private sector. Credit 3 units.

U19 SUST 375 Contemporary Organization Development: Creativity, Innovation, Sustainability
This course examines contemporary theories and principles of organization development (OD) with an emphasis on creativity, innovation, and sustainability as measures of organizational success. The course is divided into three core sections: methods for creating organizations and new initiatives; competencies and systems for organization development and renewal; and conceptual and practical aspects of organizational sustainability. We also study examples of successful, creative organizations in public and private sectors including business, nonprofit, information technology, health care, and communications. Students will draw on their own work experience as they study and apply course content from multiple disciplines including critical theory, creativity studies, organizational studies, and communications theory.

U19 SUST 3777 Accounting and Finance for Sustainable Operations
This course will provide students a comprehensive overview of management, accounting & finance as they relate to sustainable business operations. This course will explore the core concepts, strategies and practices of sustainable business while providing real-world examples of these principles to individual cases as well as students' own current organizational settings. The concepts of this course will be taught through the required reading, lectures and guest speakers. Students will be required to put sustainable business accounting & finance concepts into practice by completing a sustainable accounting or finance business audit of an existing business or developing a sustainable business plan, taking into account the triple bottom line principles. Credit 3 units.

U19 SUST 3795 Anthropology and Climate Change: Past, Present and Future
This course provides an overview for interplay between humanity and global climate change that encompasses three-field anthropological subjects. Course material includes the role of climate change in shaping human evolution, human solutions to climatic challenges through time, the impact of human activities on the climate, and modern sociocultural examinations of how climate change is affecting the lives of people around the world. Credit 3 units. UColl: OLI

U19 SUST 381 Evolutionary Medicine
Evolutionary Medicine examines how human evolution relates to a broad range of contemporary health problems including infectious, chronic, nutritional, and mental diseases and disorders. The primary goal of the course is to compare modern human environments and behaviors with the conditions under which humans evolved to determine the extent to which medical conditions of the present may be a consequence of adaptation to different conditions of the past. Hybrid online. Credit 3 units.

U19 SUST 413 Environmental Science: Regional and Global Perspectives
This course provides an overview for interplay between humanity and global climate change that encompasses three-field anthropological subjects. Course material includes the role of climate change in shaping human evolution, human solutions to climatic challenges through time, the impact of human activities on the climate, and modern sociocultural examinations of how climate change is affecting the lives of people around the world. Credit 3 units.
American building to discern evidence of national identity, of its production. Ultimately, students will be able to read an architecture reveal the social, economic and political structures occurring alongside the emulation of classical and modern forms and styles representing a new national American practice of architecture: the embrace of exceptionalism. The point of study will be examining contradictory tendencies in the definitive characteristics of American architecture. A central large-scale ecology.

A survey of ecological principles underlying the spatial and temporal distribution of populations and biological communities. The focus of this course is on the major concepts of ecological theory. Each concept is illustrated using case studies from the ecological literature. Students are also introduced to the primary literature of ecology and are expected to lead class discussions evaluating this literature. Topics include natural history, temperature and water relations, population ecology, population and species interactions, communities and ecosystems, and large-scale ecology. Same as U29 Bio 413 Credit 3 units.

U19 SUST 410 Sustainable Development and Conservation: Madagascar

This course focuses on sustainable development in rural subsistence economies, using Madagascar as case study. Students from diverse disciplines are challenged to develop and assess the feasibility of projects that can have a positive impact on communities constrained by poverty traps. The span of projects includes topics such as forest conservation and use, nutrition, health, food security, clean water, education, and bottom-up economic growth. Students in humanities, social sciences, business, design, engineering, physical sciences, law, social work, economics, political science, public health and others use their different perspectives to search for answers. Teamwork and peer teaching are central to the course. Competitively evaluated projects will be field-tested in Madagascar. Selected teams will travel to Madagascar in May and work with the Missouri Botanical Garden Community Conservation Program to adapt projects to conflicting environmental, cultural, economic, and political factors. Poster board sessions for students taking the trip occur in the fall term. Project teams selected to go to Madagascar will be assessed a lab fee at the time their participation in the trip is confirmed. The lab fee covers the cost of airfare, in-country transportation, and approximately three weeks of in-country lodging and food. Undergraduate students should register for the course using one of the undergraduate cross-listed course numbers. Same as U85 IA 5142 Credit 3 units.

U19 SUST 419 History of American Architecture

This course examines the ideological, political, economic and social determinants that have shaped the look of American architecture. Throughout readings that will include a survey text in addition to topical works covering the social history of housing, the vernacular architecture of Las Vegas and the rise (and fall, and rise) of Frank Lloyd Wright, students will learn the definitive characteristics of American architecture. A central point of study will be examining contradictory tendencies in the American practice of architecture: the embrace of exceptionalism through modern forms and styles representing a new national identity, occurring alongside the emulation of classical and European precedents to legitimate a new nation's buildings. The readings will illuminate how the characteristics of American architecture reveal the social, economic and political structures of its production. Ultimately, students will be able to read an American building to discern evidence of national identity, individual political agency, the evolution of gender roles, the assertion of disciplinary and economic power, and the evolution of the American artistic sensibility. This course will count toward major in American Culture Studies for day students. This course fulfills the Humanities distribution requirement for the AMCS MA program. It also counts toward the MD and some concentration area requirements for the AMCS major and minor. Same as U89 AMCS 420 Credit 3 units. UColl: ACF, ACH

U19 SUST 450 Sustainability Capstone

This is the required capstone/practicum course for the Bachelor of Science in Sustainability, Certificate in Sustainable Environment and Science, Certificate in Sustainable Management and Organizations, and Certificate in Sustainable Communities and Development. This is a 3-unit experiential course, faculty supervised and tailored to each student's professional goals, that applies concepts and skills from earlier courses to a hands-on sustainability project in a work or studio setting. Credit 3 units.

U19 SUST 481 Advanced GIS

This course is designed to move beyond tools and skills learned in Applications in GIS (EnSt 380/580). Classes will feature hands-on exercises selected to help students master advanced GIS analysis tools and techniques, while providing experience in the planning and execution of real-world projects. Primary emphasis will be on applying fundamental GIS concepts, performing spatial analysis, developing proficiency with core ArcGIS software (e.g., Network Analyst extension), resolution of problems, and efficient delivery of results. Readings from books and scientific literature will introduce key concepts and provide real-world examples that will be reinforced in the hands-on exercises, assignments, and projects. As the semester develops, students will gain a variety of new tools and techniques that will allow them to complete a final independent project that integrates the material learned during the course. Same as L82 EnSt 481 Credit 3 units. A&S IQ: NSM; Arch: NSM; Art: NSM

U19 SUST 492 Decoding the City

While architecture and infrastructure are worthy of study in themselves, often they signify more complex cultural meanings, mask efforts to erase or reorder the city, and conceal histories of injustice. This course presents methods for "reading" the built form of the American city to decode histories of architecture, culture, public policy and economics. City space can be read literally, but this course will unpack the symbolic meanings of urban spaces, neighborhoods, buildings and sites. Students will undertake readings that will present methods for understanding and analyzing the city's form, before delving into a specific case study of the Mill Creek Valley. As St. Louis' largest African-American neighborhood, but almost completely erased between 1959 and 1965 using city and federal funds, the site of the neighborhood remains a potent and under-examined part of St. Louis. The course will examine the history of the neighborhood as well as related histories of federal and local urban renewal policies, African-American cultural history and historic preservation. Research into the neighborhood will include experiences at local archives where students will learn to attain and apply primary source documents vital to urban history including Census records, building permits, municipal ordinances and insurance maps. Additional readings will offer insights into possible methods for interpreting and commemorating places
that illuminate the urban built environment's historic past. The final project in this course will entail students collaboratively working on a public interpretive project for Mill Creek Valley where they can apply both methods of decoding and curating the city. This course satisfies the Humanities and Social Science requirement for the master's program in American Culture Studies.
Same as U89 AMCS 492
Credit 3 units. UColl: ACH, ACS, HSM, HUS