Sustainability

The Bachelor of Science in Sustainability provides an interdisciplinary approach to understanding and resolving today's most pressing and complex environmental, economic, and social challenges. The program is built on a foundation of Arts & Sciences courses that examine sustainable living from multiple perspectives — scientific, political, economic, social, historical, philosophical, anthropological, and literary.

Grounded in this integrative approach and common understanding of the issues, students then choose one of three concentrations for greater in-depth study of sustainability:

1. Sustainable Environment and Science, for primary focus on environmental sciences, natural resources, and energy;
2. Sustainable Management and Organizations, for primary focus on sustainable business strategies and the triple bottom line — economic, social, environmental;
3. Sustainable Communities and Development, for primary focus on designing and managing sustainable spaces in our cities and communities.

The three concentrations include selected courses from Arts & Sciences, Business, Engineering, and Architecture.

The overarching goal of the Bachelor of Science in Sustainability is to provide students with knowledge and methods about sustainability, local to global, and to help improve the quality of individual lives, the productivity of institutions, and the security of our planet.

Candidates for the Bachelor of Science degree in Sustainability in University College may not simultaneously pursue a Certificate in Sustainability (Communities and Development, Environment and Science, Management and Organizations) offered by University College. Bachelor of Science in Sustainability students should pursue this category of courses as a concentration within the Bachelor of Science.

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Website: http://ucollege.wustl.edu/programs/undergraduate/bachelors-sustainability

Degree Requirements
Bachelor of Science in Sustainability

All University College undergraduate students must satisfy the same general-education requirements (http://bulletin.wustl.edu/prior/2016-17/undergrad/ucollege/bachelors/#degreerequirements). Requirements specific to this major include:

Total: 45 units

Required Core Courses: 30 units

- Anthro 361 Culture and Environment 3
- Bio 209 Introduction to Environmental Studies 3
- Bio 364 Global Sustainability 3
- Bus 358 Systems Thinking and Decision Analysis 3
- Econ 355 Environmental Economics 3
- ELit 313 Nature and the American Literary Imagination 3
- or ELit 344 Nature Writing and Environmentalism 3
- Phil 2352 Environmental Ethics 3
- PolSci 3312 Environmental and Energy Issues 3
- SUST 328 Environmental Law: Applications Toward Sustainability 3
- SUST 344 Global Development and Sustainability 3

Sustainable Environment and Science Concentration: 15 units, including required U19 SUST 450 Sustainability Capstone, and four other authorized electives chosen from below; other courses with authorization.

- Bio 413 Environmental Science: Regional and Global Perspectives 3
- Bio 419 Ecology 3
- CIM 435 GIS for Engineers 3
- EPSc 107 Environmental Geology and Energy 3
- Hist 3643 Science and Society 3
- SUST 146 Introduction to Energy, Environmental and Chemical Engineering 3

Students pursuing this concentration are advised to take Calculus and Statistics, to count toward math/science distribution or general elective.

Sustainable Management and Organizations Concentration: 15 units, including required U19 SUST 450 Sustainability Capstone, and four other authorized electives chosen from below; other courses with authorization.

- Bus 270 Marketing Concepts 3
- Bus 305 Leadership for Organizational Success 3
- Bus 3501 Public Relations 3
- Bus 356 Operations Management 3
- Bus 375 Contemporary Organization Development: Creativity, Innovation, Sustainability 3
- Bus 3777 Accounting and Finance for Sustainable Operations 3
- HRM 520 Organizational Behavior and Administration 3

Sustainable Communities and Development Concentration:
15 units, including required U19 SUST 450 Sustainability Capstone, and four other authorized electives chosen from below; other courses with authorization.

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>Anthro 312</td>
<td>Ancient Civilizations of the Old World</td>
<td>3</td>
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<tr>
<td>ARCH 336A</td>
<td>Sustainability (A46)</td>
<td>3</td>
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<tr>
<td>ARCH 472</td>
<td>Sustainable Development (A46)</td>
<td>3</td>
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<tr>
<td>Bus 359</td>
<td>Introduction to Governmental Budgeting</td>
<td>3</td>
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<tr>
<td>History 3066</td>
<td>The American City in the 19th and 20th Centuries (L22)</td>
<td>3</td>
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<tr>
<td>SUST 106</td>
<td>Introduction to Political Theory</td>
<td>3</td>
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<tr>
<td>SUST 299</td>
<td>The Study of Cities and Metropolitan America</td>
<td>3</td>
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<td>SUST 315</td>
<td>Introduction to Historic Preservation</td>
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<td>SUST 343</td>
<td>Managing LEED Certification</td>
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<td>SUST 352</td>
<td>Universal Design: Process, Principles, and Application</td>
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<td>SUST 362</td>
<td>Practical Applications of Sustainable Design I</td>
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<td>SUST 363</td>
<td>Practical Applications of Sustainable Design II</td>
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### 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. A&S: SS A&S IQ: SSC 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 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) and their underlying geospatial science. Topics include spatial data types, map coordinate systems and projections, basic spatial data analysis, and processing and visualizing data in GIS. Lectures are supplemented with lab sessions to develop problem-solving skills using ESRI ArcGIS software (including ArcView/ArcInfo and its Spatial Analyst extension). Same as U90 GIS 200 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. Same as U29 Bio 209 Credit 3 units.

#### U19 SUST 219 Spirituality and Sustainability: Theories and Applications

This course addresses the role spirituality plays in sustainable living. We focus specifically on the concept of transcendentalism or unifying awareness, the moral foundation for relating interpersonally and with the natural world. Through examining selected economic and scientific readings, spiritual and indigenous traditions, and case studies, students develop a critical understanding of how spirituality and sustainability are interdependent and why this holistic perspective is a crucial element in decision analysis models. The foundation of our research includes E.F. Schumacher, Dr. Vandana Shiva, Michael Porter, and Dr. Donella Meadows: East Asian, Sufi, Hindu and Deep Ecology traditions plus Saami, Aramaic, and Aborigine cultures. Students in this course demonstrate applying systems thinking and decision analysis, relevant in complex environmental, economic and social equity challenges. Credit 1 unit.

#### U19 SUST 2352 Environmental Ethics

A general survey of current issues in environmental ethics, focusing on problems such as global climate change, future generations and sustainability, protection of endangered species, animal rights, environmental degradation, resource depletion,
global justice, and business obligations. Students will also learn some ethical and political theory. Same as U22 Phil 2352
Credit 3 units.

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 a 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. A&S: SS A&S IQ: SSC Arch; SSC Art; SSC BU: BA

U19 SUST 301 Advanced GIS
This course expands on the fundamental principles of GIS and applications of geographic information systems (GIS). The science behind many common GIS concepts are also covered. Topics include spatial database design, raster modeling, geostatistics, spatial analysis, GIS customization, and 3-D visualization. Lectures are supplemented with lab sessions to develop problem-solving skills using GIS software such as ArcGIS and Google Earth.
Same as U90 GIS 300
Credit 3 units.

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 plan in the urban core. How can people and nature coexist in ways that are mutually beneficial? This course will explore three things: (1) what urban ecology is: the underpinning and forerunners in the field; (2) why urban ecology is important: potential benefits and impact in the social, economic and environmental realms; and (3) how urban ecology is being tested and applied around the world: implementation techniques and approaches. This course is designed to serve as an introduction to the topic of urban ecology, and may serve as a prerequisite for more in-depth course work, such as an educational trip to experience biophilic cities in person.
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 320 Spirituality and Sustainability: Theories, Traditions, Applications
This course examines the spiritual dimensions of the relationship between the Earth and its human inhabitants. We focus on the concept of holism, the foundation for relating interpersonally and with the natural world. First, we examine the ways cultural and theological assumptions have shaped peoples’ treatment of the natural world. Next, we look at the ways changes in the environment have influenced human social and cultural patterns. For reference we examine selected economic, naturalist, and social justice readings; spiritual and indigenous traditions; and case studies of successful sustainability programs, assessing the ethical response to sustainability issues. Finally, we demonstrate applying the holistic systems model to sustainability issues.
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.

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, 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.

U19 SUST 3322 Sustainability Policy
Same as U25 PolSci 3322
Credit 3 units.

U19 SUST 334 Managing LEED Certification
This course provides in-depth instruction on how to effectively manage the documentation process and project team from Charette 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 focuses 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 352 Universal Design: Process, Principles, and Application
This multidisciplinary course will provide an introduction to the philosophy, principles, and practice of universal design in a variety of design disciplines including architecture, urban planning, and industrial design. Current international trends will be discussed in the context of the history of universal design and case studies of noteworthy examples. The course will include study of the connections between sustainable and universal design practices, recognition and elimination of barriers, limitations of accessible design practices, and the differences between regulatory standards and universal design outcomes. Students will examine the impact of the environment on people with differing abilities including variations in perception, cognition, and movement.
Credit 3 units.

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 103.
Same as U07 Econ 355
Credit 3 units.

U19 SUST 356 Operations and Supply Chain Management
Same as U44 Bus 356
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 360 Culture and Environment
An introduction to the ecology of human culture, especially how "traditional" cultural ecosystems are organized and how they change with population density. Topics include foragers, extensive and intensive farming, industrial agriculture, the ecology of conflict, and problems in sustainability.
Same as U69 Anthro 361
Credit 3 units. UColl: NW

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, ecological economics, 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
This course explores the theory and practice of strategic planning, with emphasis on designing effective organizations and managing change. Using case studies, we will examine and use fundamental principles and tools for organizational design and change as they relate to strategic planning and decision making. The course is especially useful for corporate executives and managers, board members, nonprofit directors, entrepreneurs, and student group leaders. Students develop written and oral presentation skills in the context of strategic planning, and design their own strategic plan as a capstone project.
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 3668 Tropical Field Biology and Primatology
This field course to the Peruvian Amazon gives students advanced training in field techniques relevant to primate conservation and research, and exposes them to the diverse community of plants and wildlife of the area. We study ornithology, herpetology, primatology, botany, and entomology, and train in field methods including spatial orienteering, biodiversity monitoring, radio telemetry, mist-netting of birds and bats, neo-tropical plant identification, tree-climbing, off-trail primate group follows, behavioral observations, and camera-trapping. Students will complete a daily observation log, primate census log, and species sightings list. Credit variable, 2 or 3 units. Students registered for 3 units required to submit a research paper due after the trip to the Peruvian Amazon. In addition to tuition, student costs include site fee, all airfare and ground transportation, some food and supplies, medical costs of any kind, and costs related to exigent circumstances. Medical insurance is required. Students are required to submit a course application before registration.

Same as U69 Anthro 3668
Credit variable, maximum 3 units.

U19 SUST 3669 Tropical Field Biology and Primatology - India
This field course to the Western Ghats of India gives students advanced training in field techniques relevant to primate conservation, biodiversity monitoring, and research, and exposes them to the diverse community of plants and wildlife of the area. We study ornithology, herpetology, primatology, botany, and entomology, and train in field methods including spatial orienteering, biodiversity monitoring, radio telemetry, tropical plant identification, behavioral observations, and camera-trapping. Students will complete a daily observation log, primate census log, and species sightings list. Course is 2 or 3 units and students are required to submit a research paper due after the trip to India for the 3-unit version of the course only. In addition to tuition, student costs include site fee, all airfare and ground transportation, some food and supplies, medical costs of any kind, and costs related to exigent circumstances. Medical insurance is required. Students are required to submit a course application before registration.

Same as U69 Anthro 3669
Credit variable, maximum 3 units.

U19 SUST 3670 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.

Same as U44 Bus 367
Credit 3 units.

U19 SUST 3711 International Agricultural Development and Policy
Same as U07 Econ 3711
Credit 3 units. UColl: NW

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.

Same as U44 Bus 375
Credit 3 units.

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.

Same as U44 Bus 3777
Credit 3 units.

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.

Same as U29 Bio 481
Credit 3 units.
U19 SUST 4111 Tropical Ecology and Tropical Rainforest Field Experience
This course explores the terrestrial ecosystems of the tropics, focusing predominantly on the lowland and mountain rainforests, mangroves, cloud forests, and tropical dry forests of the Neotropics. We examine the biological and ecological processes that influence ecosystem dynamics and biodiversity within representative communities. We discuss issues of conservation, sustainable development and resource use, and the human impact on these fragile ecosystems. Lectures are interspersed with student presentations and discussions of primary literature. Same as U29 Bio 4111
Credit 3 units.
Same as U85 IA 5142
lodging and food.
transportation, and approximately three weeks of in-country
is confirmed. The lab fee covers the cost of airfare, in-country
be assessed a lab fee at the time their participation in the trip
in the fall term. Project teams selected to go to Madagascar will
be field-tested in Madagascar. Selected teams will travel to
Garden Community Conservation Program to adapt projects
Madagascar in May and work with the Missouri Botanical
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.
Same as U85 IA 5142
Credit 3 units. UColl: IAA

U19 SUST 413 Environmental Science: Regional and Global Perspectives
This course examines the interrelationships between humans and their environment, moving from local and regional views up to a global perspective. Taking an ecosystem approach, the course starts with basic ecological principles necessary for understanding our environment. We will then explore how environmental science incorporates concepts from politics, social sciences, economics, ethics, and philosophy; physical and biological resources; conservation, management, sustainability, and restoration; population principles; environmental economics; human impacts (especially pollution and disturbance); environmental health & toxicology; and environmental policy. Lectures and discussions will focus on the major issues involved in environmental challenges, drawing on current, carefully selected articles from some of the most respected magazines, newspapers, and journals published today. Prerequisites: an introductory major’s-level course; or permission of instructor. Same as U29 Bio 413
Credit 4 units.

U19 SUST 419 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 419
Credit 3 units.

U19 SUST 420 History of American Architecture
"The perennial architectural debate has always been, and will continue to be, about art versus use, visions versus pragmatism, aesthetics versus social responsibility. In the end, these unavoidable conflicts provide architecture's essential and productive tensions; the tragedy is that so little of it rises above the level imposed by compromise, and that this is the only work most of us see and know." —Ada Louise Huxtable. This course examines the ideological, political, economic and social determinants that have shaped the look of American architecture. Starting with a thorough survey of the historic development of American architecture pursued in a chronological reading of styles, forms, and major architects, the course examines key tensions in the development of American architecture. Students will undertake readings, site visits, and discussions that probe whether there is a distinctly American mode of creating architecture, and what contingencies illuminate or obscure that mode. The central questions of this course: What are the definitive characteristics of American architecture? Does the American practice of architecture espouse an exceptionalism, or does it emulate international precedents (or both)? Do the characteristics of American architecture reveal the social, economic, and political structures of its production? Ultimately, can we read an American building to reveal sense 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 fulfills the Humanities and Fine Arts distribution requirement for the AMCS MA program.
Same as U89 AMCS 420
Credit 3 units. UColl: ACF, ACH

U19 SUST 4140 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.
Same as U85 IA 5142
Credit 3 units. UColl: AIA