SUSTAINABILITY STUDIES (SUST)

SUST 210 - SUSTAINABLE FUTURE
This course provides an overview of sustainability by exploring definitions, controversies, trends, and case-studies in various systems and locales (urban/rural, local/national/global). Key topics of investigation include critical elements of sustainability, such as environmental history and urban ecology, sustainable development and landscape transformations, recycling/waste management, ecosystem restoration, and environmental justice. Students will develop a critical understanding of sustainability's various definitions; comprehend factors that contribute to and detract from environmental quality, community stability, economic and social equity, and other indicators of sustainability; and learn to identify a set of both qualitative and quantitative standards to assess levels of sustainability in an ecosystem or community. Includes field trips to selected institutions/locations in the Chicago Metropolitan Area that exemplify sustainability principles in action.
Credits: 3
Attributes: Social Science
Prerequisites: ENG 101

SUST 220 - WATER
This course evaluates water quality and water sustainability issues through the analysis of local, regional, and global case studies. Key concepts and themes to be addressed include the science and policy of ensuring a safe water supply; water conservation strategies, particularly in urban areas; wastewater treatment and watershed management; and wetlands ecology, restoration, and management. Students will develop a thorough understanding of the water cycle and its relation to the sustainability of water systems; learn to define, measure, and sample water quality in a variety of contexts using field-based water chemistry sampling techniques; understand and assess the importance of water as an environmental as well as cultural resource; and evaluate contemporary water management and policy issues, particularly those affecting the waterways of the Chicago region as well as the Great Lakes ecosystem. Includes field trips to area locations such as the Chicago River, water and wastewater treatment plants, and natural and/or restored wetlands.
Credits: 3
Attributes: Social Science
Prerequisites: ENG 101

SUST 230 - FOOD
If we are what we eat, understanding the complexities of how our food gets on our tables is vital to our health and environment. This course is an overview of worldwide sustainability issues surrounding food production and consumption. A key issue addressed is the importance of local food production, particularly in urban areas, and the assessment of how locally produced food impacts the long-term sustainability of global food production. Students leave the course with the ability to compare chemical-intensive versus organic agriculture in terms of the ecological and economic impacts of both systems; understand the advantages and challenges of local food production, the "permaculture" movement, and their relation to environmental and economic sustainability; and evaluate the capabilities of urban agriculture for improving and sustaining of economically-distressed communities. Service learning component may include special projects at a local urban farm.
Credits: 3
Attributes: Social Science
Prerequisites: ENG 101

SUST 240 - WASTE
Cleanliness is next to godliness; it also is vital to the daily management of urban systems, lest we be plagued with epidemic disease and unpleasant aesthetics. How society manages sewage, garbage and recycling involves far more than dropping bins off on our curbs and watching the waste magically disappear. This course examines sustainability dilemmas involving waste management (including consideration of the public and private systems developed to address specific waste concerns), and considers consumption trends past and present, as well as future solutions. Students analyze issues of waste policy and management and learn to assess the economic, political, and chemical/environmental impacts of waste stream practices. Incorporates field-based scientific techniques to test levels of wastewater contamination in area waterways and/or the presence of contaminants in soil.
Credits: 3
Attributes: Social Science
Prerequisites: ENG 101

SUST 250 - THE SUSTAINABLE UNIVERSITY
RU's 2015 Strategic Sustainability Plan maps out how the university as a whole can become more sustainable, from academics to operations to community engagement. Student creativity and action are vital to this effort. While learning about campus-based sustainability innovations in the US and abroad, student teams design and complete projects that implement various aspects of RU's plan in a hands-on application of sustainability principles, service learning, and environmental activism.
Credits: 3
Attributes: Grounds for Change, Social Science, Transformational Service Learning
Prerequisites: ENG 102
**SUST 310 - ENERGY AND CLIMATE CHANGE**
In a world experiencing climate change, societies must understand the consequences of energy consumption and production, and develop new sources of clean, sustainable energy. This course investigates the environmental implications of energy production and consumption, and assesses current and future problems in the energy field. Students gain an understanding of the natural phenomena and scientific principles that provide the basis of our understanding climate change, such as the carbon cycle and the greenhouse effect, and assess the social and environmental consequences of energy production and consumption, whether sustainable or otherwise. Key topics include the relation of energy production and consumption to climate change, the development of energy distribution systems that shape our present opportunities and challenges, and possible alternatives for future energy development.
Credits: 3
Attributes: Social Science
Prerequisites: ENG 102

**SUST 320 - SPRAWL, TRANSPORT, PLANNING**
Exploration of the sustainability challenges in the built environment, particularly the debate over sprawl, suburban and exurban development, smart growth, commuting patterns, city planning, and the "new urbanism." Key topics include the exploration of transportation systems, ranging from bicycle commuting to highway construction to public transportation networks to intercontinental air travel, and their relationship to sustainable planning, whether at the level of community, city, or region. Students gain an understanding of the political-economic, spatial, and public policy issues relating to sprawl; learn the history, present use, and future prospects of urban planning and its potential to reshape the urban and suburban landscape in positive ways; develop qualitative and quantitative means to evaluate current transportation systems in terms of efficiency, cost, and environmental impact; and develop critical tools and presentation skills in order to proffer alternative transportation initiatives, particularly at the community or regional levels.
Credits: 3
Attributes: Social Science
Prerequisites: ENG 102

**SUST 330 - BIODIVERSITY**
Development, pollution, agriculture, invasive species, and habitat destruction have resulted in an alarming loss of species worldwide. This course explores biodiversity in the context of ecology, conservation, ecosystem restoration, and regional planning. Students learn about a variety of natural science concepts and theories relevant to understanding the biological and ecological significance of biodiversity, such as ecosystems, species, genes, ecological interactions, and evolution. Students will gain a detailed understanding of the importance of conserving biodiversity to natural systems and human communities; and will learn the value of open space, parklands, and wildlife refuges for preserving biodiversity, particularly in urban areas. Field experiences in selected ecosystems in the region (such as prairie or wetlands restorations, forest preserves, waterways, and/or dunes) provide students with opportunities to learn and apply biodiversity assessment techniques, such as field-based plant or animal surveys. Strong potential exists for service learning partnerships with local conservation and restoration organizations in the Chicago region.
Credits: 3
Attributes: Natural Science
Prerequisites: ENG 102

**SUST 340 - POLICY, LAW, ETHICS**
An investigation into the political, legal, and ethical dimensions of sustainability in the U.S. and around the world, using case studies in public policy, environmental law, and community activism. Topics addressed include the impact of policies and laws upon communities, especially in urban areas, and the relevance of environmental policy and ethics to the development of sustainable agriculture, transportation, energy, and housing systems. Students will gain an understanding of the political terrain, the significant ethical debates, and the legal boundaries surrounding sustainability by critically evaluating policy questions in a sequence of critical writing projects.
Credits: 3
Attributes: Social Science
Prerequisites: ENG 102

**SUST 350 - SERVICE AND SUSTAINABILITY**
Focuses on one of sustainability's "Three Es" – Equity – within the broad context of environmental stewardship and economic development. A small seminar experience in which the professor and students partner with an outside organization, institution, or community to perform transformational service learning work and address real-world sustainability problems and solutions. Students will engage and debate matters of social equity and environmental justice in relation to sustainable development, urban planning, ecological conservation, and other issues. Course topics and community partners vary by section; past seminars have focused on, for example, the relations among urban farming, community development, and social justice. Activities include seminar discussions and short oral presentations, field-based work with the community/organizational partner, and other field trips or campus-based activities as arranged by the instructor. Both individual and collaborative work are emphasized in assignments such as short critical essays, oral reports, and co-authored applied research projects.
Credits: 3
Attributes: Social Science, Transformational Service Learning
Prerequisites: ENG 102

**SUST 390 - SPECIAL TOPICS IN SUSTAINABILITY**
In-depth seminars on specific topics in sustainability, including environmental literature and communication; the urban environment; sustainability and environmental history; parkland conservation; campus/institutional sustainability planning; and representations of sustainability in art, literature, film, and media.
Credits: 3
Prerequisites: ENG 102

**SUST 395 - SUSTAINABILITY STUDIES INTERNSHIP**
Individually designed Sustainability Studies internships and/or service-learning experiences. With the approval of a faculty sponsor and the program director, students may participate in an appropriate internship in the field of Sustainability and earn credit. Internships must involve a minimum of 40 hours of work per credit hour. From 1-6 credits may be earned. Students are required to complete written work, as determined by the faculty sponsor, reflecting on their experience.
Credits: 1-6
Course Notes: Faculty sponsor and, program director approval required.