

Program Assessment Plan (version 4)

(Adapted from the SUST Program Approval Form of Dec. 2009)

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Learning Outcomes and Assessment Measures

Students graduating with a major in Sustainability Studies will have an interdisciplinary understanding of the varied dimensions of sustainability, both from a local and global perspective; be able to articulate how sustainability issues relate to matter of the environment, the economy, and social equity; and demonstrate proficiency in critical thinking, reading, writing, and research skills. More specifically, students should be able to:

1. Identify and explain the central sustainability problems of the 21st century in multiple arenas, including energy, transportation, food production, waste management, water availability, and general consumption;
2. Draw on a foundation of scientific, environmental, and quantitative literacy in order to understand and assess (from the perspective of a non-specialist) the science behind major sustainability problems, such as climate change, loss of biodiversity, and the threats to natural resources;
3. Apply the scientific method and quantitative literacy skills to the study of natural and social ecosystems by forming hypotheses, gathering empirical data (in classroom- and field-based contexts), critically analyzing said data, and effectively presenting them in graphical and written form;
4. Recognize not only issues of concern to the U.S., but also the global social justice implications of resource allocation, food production, energy consumption, waste production, etc.;
5. Understand the political processes and policy actors central to progress in sustainability;
6. Understand the importance of leadership as central to social change and technical innovation with respect to creating more sustainable communities;
7. Apply knowledge about sustainability to their areas of personal interest and/or work professions.

This overall set of knowledge, skills, and critical dispositions of students in the Sustainability Studies program will be regularly assessed in the five-year review cycle described below. In addition, each SUST course has its own concrete learning objectives (see the course descriptions in Appendix II for details) which will be assessed through a variety of assignments and

evaluations, including but not limited to: in-class writing assignments, in-class participation, formal examinations, analytic papers, oral and web-based presentations, research reports, field-based experiments and surveys, and service learning projects.

Tentative Five-Year Assessment Plan

The College of Professional Studies faculty will continually assess both the students and the program to ensure that Sustainability Studies remains both relevant and current, that programmatic learning objectives are being achieved, and that students are well-prepared for graduate study and/or the work force. The faculty will consider using an advisory committee to assist in curriculum development and assessment, as well as to maintain its currency. These advisory committee members will consist of adjuncts, community leaders in a variety of disciplines and professions related to sustainability, and full-time faculty.

A detailed Program Improvement Plan (PIP) will be developed during the spring/summer of 2013 and submitted to and monitored by the Assistant Provost for Assessment and Accreditation. This initial draft of the PIP will be revised after feedback by the RU Assessment Committee.

A "curriculum map" for Sustainability Studies (see page 4), which graphically depicts the relationship between the program's overall learning objectives and the topic of each course, will help guide our formal assessment process. Over time, this map will be revised to reflect what we learn from assessment activities and to ensure that program learning objectives are being nurtured and met at multiple points in the curriculum.

Key assumptions which will drive assessment in SUST:

- Assessment must take into account the nature of the curriculum, students, and course delivery modes, as well as be consonant with the Higher Learning Commission's recommendations for assessing student learning.
- Assessment of student learning in interdisciplinary programs like Sustainability Studies should incorporate qualitative approaches as well as quantitative measures (where appropriate), be based upon the overall learning objectives of the program, and be informed by emerging standards of environmental/sustainability literacy for college graduates.
- Assessment activities should be linked to faculty development and curriculum review as part of the program's dedication to a process of continuous improvement.

Examples of key questions we plan to investigate over time:

- How well are we achieving our learning objectives for each course and for the SUST sequence as a whole?
- To what extent do learning objectives need to be revised based on developments in the newly-emerging academic field of Sustainability Studies, as well as changes in technology, science, and public policy outside of academia?

- What strengths and weaknesses can we identify in SUST graduates, as determined by various qualitative and quantitative measures? How can we build on the strengths and address the weaknesses in our curriculum and teaching approach?
- How well prepared are SUST graduates for employment and graduate school?
- How effective are the different delivery modes in educating our students? How do teaching innovations, such as science-focused field experiences and service learning opportunities, contribute to and enhance learning?

Assessment measures and methods to be used (in combination) to address the above questions:

- **Environmental and/or sustainability literacy standards** that can help us determine both the level of student achievement as well as the relevance of programmatic learning objectives to emerging developments in the field of sustainability. Such resources standards guidelines, rubrics, academic articles, and sample assessment plans:
 - Ohio State University's Environmental and Social Sustainability Lab, [Measuring Undergraduate Students' Knowledge of Sustainability](#) (July 2013)
 - Monika Urbanski, "[Assessing Sustainability Literacy: Challenges, Current Research, and Opportunities for Collaboration](#)" (AASHE blog 5 Nov 2012); [How Many Dots To Connect? Defining Sustainability in the Curriculum](#) (18 Feb 2013)
 - [Environmental Literacy Council](#)
 - Focht, Gill, and Smardon, "Developing Sustainability Program Assessment Rubrics" (Pp presentation at AESS 2012)
 - Macalester Environmental Studies Assessment Plan (2009)
- **Formal assessment tools by professional organizations** such as [AASHE](#) (assuming such measures emerge in coming years; our program may very well end up contributing to such efforts to develop effective assessments)
 - AASHE's [STARS webinars](#)
 - AASHE [blog posts on curriculum](#)
 - NSSE Sustainability Education Consortium: [A First Year Report](#) (2011)
- **Surveys of current students and graduates** to determine their level of satisfaction with the program and their level of preparation for work and graduate study
- **Empirical tracking of student success** in gaining employment in the field as well as entry into graduate programs
- **Student portfolios** of writing assignments and class projects spanning multiple SUST classes; one example of a class project is [Schaumburg's Sustainable Future](#) website/blog, begun in Spring 2011

Tentative Timeline for Assessment (Updated 25 January 2014)

The following timeline is an example of a five-year assessment cycle. We expect to consult with the University Assessment Committee and revise this schedule as needed based on its input during the Summer/Fall of 2013.

<p>Year One 2012-13</p>	<ul style="list-style-type: none"> ✓ Research availability and suitability of external standards/assessments in environmental literacy and sustainability studies ✓ Develop formal Program Improvement Plan (PIP) based on stated learning outcomes and curriculum map ✓ Conduct faculty development workshops geared toward course design and curriculum development
<p>Year Two 2013-14</p>	<p>Assess sustainability literacy in selected SUST courses as well as in non-SUST controls</p> <p>Use above results to critique literacy test and reflect on / revised SUST program learning objectives</p> <p>Develop Learning Objectives 2 and 3 to be tested in S14 or F14</p> <p>Begin recruiting members for advisory board</p> <p>Start gathering systematic data on SUST grads' employment and/or educational pursuits</p>
<p>Year Three 2014-15</p>	<p>Conduct faculty development workshops on pedagogy and program assessment</p> <p>Survey current students for critical input on course design, field experiences, learning outcomes, and program satisfaction level</p> <p>Preliminary report on SUST graduates employment/education</p> <p>Survey of SUST graduates on value of degree</p> <p>Convene advisory board to provide input on assessment process and foster community connections for program</p>
<p>Year Four 2015-16</p>	<p>Assess learning outcomes in all SUST courses</p> <p>Convene advisory board to provide input on assessment process and foster community connections for program</p> <p>Review overall program objectives, learning outcomes, and curriculum map based on faculty input, student course evaluations, and new developments in the field of sustainability studies as well as environmental literacy</p>
<p>Year Five 2016-17</p>	<p>Gather empirical data from SUST graduates on job placement and graduate school admission</p> <p>Convene advisory board to provide input on assessment process</p>

	and foster community connections for program Engage outside reviewers, in conjunction with consulting advisory board, to begin planning for external review of program goals, structure, and learning outcomes
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Sustainability Studies Curriculum Map

Programmatic Learning Objectives	Courses								
	210 Sustainable Future	220 Water	230 Food	240 Waste	310 Energy & Climate Change	320 Sprawl, Transport, Planning	330 Biodiversity	340 Policy, Law, Ethics	350 Service
1. Identifying and explaining central sustainability problems	X	X	X	X	X	X	X	X	
2. Developing scientific, environmental, and quantitative literacy	X	X	X	X	X	X	X		
3. Applying the scientific method and quantitative literacy to natural and social ecosystems	X	X	X	X	X	X	X		
4. Recognizing social justice implications in local and global contexts	X	X	X	X	X	X		X	X
5. Understanding political processes and policy actors	X	X	X	X	X	X	X	X	X
6. Understanding the importance of ethics, leadership, and technical innovation for social and environmental change	X	X	X	X	X	X	X	X	X
7. Applying knowledge about sustainability to areas of personal interest and/or work professions	X	X	X	X	X	X	X	X	X

Key to map:

X = learning outcome is addressed in course
Shading = learning outcome is a core focus of course

Course Descriptions and Program Learning Objectives

SUST 210 Sustainable Future: Environment, Economy, Equity (3)

The nation and the world face an unprecedented challenge in the 21st century: we need to redesign and rethink much of our way of life to make it sustainable given the planet's limited and fragile resources. 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. Pre-req: ENG 101

SUST 220 Water (3)

Without water there is no life. Without clean water, human and animal life is vulnerable to catastrophic disease. How, despite population growth and industrial production, can we ensure clean supplies of water for humans and wildlife? 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. Pre-req: ENG 101

SUST 230 Food (3)

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 would integrate course material with projects and labor at a local urban farm. Pre-req: ENG 101

SUST 240 Waste (3)

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. Students will use field-based scientific techniques to test levels of wastewater contamination in area waterways and/or the presence of contaminants in soil. Pre-req: ENG 101

SUST 310 Energy and Climate Change (3)

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; learn to describe the relevant political and scientific dimensions of some of the salient technological and engineering-based approaches to combating climate change (such as carbon sequestration), as well as quantitatively assess the potential effectiveness of such approaches; develop a thorough grounding in the political and economic issues that impact both local and global approaches to energy production and responses to climate change; 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, both in terms of making predictions and proposing solutions at the local and global scales; the development of energy distribution systems that shape our present opportunities and challenges; and possible alternatives for future energy development. Pre-req: UWR

SUST 320 Sprawl, Transportation, and Planning (3)

Urban sprawl: it's unsustainable, antithetical to conservation, and seemingly unstoppable. So what do we do about it? This course explores 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. Pre-req: UWR

SUST 330 Biodiversity (3)

Is our planet dying? Not quite yet, though scientists characterize contemporary times as the latest "age of extinctions." Development, pollution, agriculture, invasive species, and habitat destruction -- all human activities being done on an unprecedented scale in the Earth's history -- 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. Pre-req: UWR

SUST 340 Policy, Law, and Ethics (3)

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. Pre-req: UWR

SUST 350 Service and Sustainability (3)

Individually designed internships and/or service-learning experiences. Students will be matched with a local organization/institution that corresponds to their personal/academic interests and career goals, where they will engage with real-world sustainability problems and solutions. As a capstone to the course, students will produce an extensive report based on their work and reflect on their experience. Pre-req: UWR

SUST 390 Special Topics in Sustainability (3)

In-depth case studies on specific topics in sustainability, including national parklands; green building design and energy efficiency; ecological restoration; the urban environment; sustainability and environmental history; environmental literature and communication; and representations of sustainability in art, literature, film, and media. Pre-req: UWR

SUST 395 Internship in Sustainability (3)

Individual internship in sustainability, typically in partnership with a local, national, or global environmental organization or sustainability-focused company. Requirements include 120 hours of work during the internship period (for 3 credits), periodic meetings with the sponsoring faculty member, and a 12-15pp reflective essay on the experience. Pre-req: UWR and SUST 210