

## Innovations in Environmental Sustainability Draft syllabus 2015

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### Course Information

<b>Name:</b>	<b>Innovations in Environmental Sustainability</b>
<b>Teaching Institution:</b>	University of Minnesota
<b>Location:</b>	Minnesota, USA
<b>Dates:</b>	4th – 23rd July 2015 (TBC)
<b>Duration:</b>	3 weeks
<b>Course contact hours:</b>	60 contact hours
<b>Pre-requisites:</b>	Students should have completed at least 1 year of studies related to biology, ecology, environmental sciences, political science, natural resource management, geography, global studies or public policy at the time of the program
<b>Course equivalencies</b>	The program is equivalent to 9 ECTS. (A standard, semester length subject at an Australian university is generally 7.5 ECTS)
<b>Last updated</b>	2 <sup>nd</sup> February 2015

### Course Descriptions/Objectives

The Innovations in Environmental Sustainability program offers an in-depth introduction and study of the historical, current, and future context of environmental sustainability. The course exposes students to the study of real-world problems from a variety of academic perspectives, incorporating disciplines from across the natural, social, and applied sciences. In addition, the course concentrates on innovative solutions being implemented in Minnesota while also approaching the problem of climate change from multiple worldviews and perspectives.

The following topics will be covered over the 3 weeks of the course:

#### Week 1 - Institute on the Environment

Course Orientation: Introductions and course overview. Group interaction and expectations. Course Schedule.

- Learning styles
- Introduction to intercultural learning

#### Introduction to Sustainability- Global Perspectives

- History – human and nature
- Limits – to growth, on land, on resources
- Our Common Future – Bruntland Commission, Millennium Development Goals
- Worldview – how we think and know about our world

#### Sustainability in Minnesota

- Ecological diversity
- Whose homeland?
- Environmental Justice & Energy
- Water

#### Life Cycle Analysis

#### Food and Agriculture: Global Landscape Initiative

#### Activities

- Campus walking tour and Minneapolis city biking tour
- Community engagement and the environment
- Sacred places along the Mississippi River
- Student organic farm

### **Week 2 - Will Steger Foundation and University of Minnesota, Morris**

#### Climate Change and Ecological Diversity Seminar with Will Steger Foundation

#### Energy literacy

- Visit to Green Institute

#### Sense of place and history with University of Minnesota, Morris

- Exploring Native culture: tour native gardens
- Glacial history

#### Exploring community energy solutions

- Tour of University of Minnesota-Morris sustainability operations
- Tour of biomass gasification plan
- Tour of ethanol plan

Exploring agriculture and prairie walk

- USDA soil lab
- Community scale anaerobic digestion (Riverview Dairy)
- Solar energy
- Wind energy

Activities

- Lake Calhoun
- Hosted family dinner

### **Week 3 - Institute on the Environment**

Full day field trip to Science Museum of Minnesota

Review and Wrap-Up

Final projects and presentations

Activities

- Optional visit to Mall of America
- Group dinner
- Closing Ceremony

### **Teaching methodology**

Material will be delivered through lectures, classroom activities, and site visits with a heavy emphasis on experiential learning.

### **Learning outcomes**

The goal of this course is to provide participants with an understanding of the complex issues surrounding sustainability and climate change while encouraging participants to think creatively about possible sustainable solutions.

Upon completion of the course students should be able to:

- Comprehend how the history of both humans and the planet underlies common definitions of sustainability and sustainable development
- Identify and understand the complexity and trade-offs in any process for creating sustainable solutions
- Exhibit a breadth of knowledge of sustainability, so that they can articulate how multiple disciplines, worldviews and approaches are valid ways to think about sustainability issues

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- Be familiar with the use of systems, thinking tools, models and practices
- Consider intergenerational equity
- Understand how culture influences sustainability thinking
- Apply strategies to develop their intercultural competence
- Critically analyse some of the cultural differences between Australia and the USA
- Exposure to creativity and innovation that fosters new ventures, businesses and governmental structures in the U.S. context

### **Course requirements (assessment)**

Students are required to undertake the following assessment:

<b>Task</b>	<b>Weighting</b>
Journal entry 1	15%
Journal entry 2	15%
Class participation & attendance	25%
Final Group presentation	20%
Final individual paper	25%

Australian universities may choose to request additional assessment from students, such as submitting a reflective journal, in order to approve credit transfer (this is strictly optional).

### **Grading**

The course will be marked based on the following grading system.

<b>Grade</b>	<b>Points</b>	<b>Definition</b>
A	95+	Achievement that is outstanding relative to the level necessary to meet course requirements
A-	90-94	Achievement that is significantly above the level necessary to meet course requirements
B+	86-89	
B	83-85	
B-	80-82	Achievement that meets the course requirements in
C+	76-79	

C	73-75	every respect
C-	70-72	Achievement that is worthy of credit even though it fails to meet fully the course requirements
D+	66-69	
D	60-65	
F	<59	Represents failure and signifies that the work was either (1) completed but at a level of achievement that is not worthy of a passing grade, or (2) was not completed

### **Teaching Faculty**

#### **Lewis Gilbert**

*Managing Director and Chief Operating Officer, Institute on the Environment, University of Minnesota*

Lewis E. Gilbert is managing director and chief operating officer with the Institute on the Environment at the University of Minnesota. As managing director, he is responsible for inspiring collaboration among existing IonE programs and creating new endeavours that advance the Institute's mission. As COO he oversees the operational aspects of IonE's facilitator role across the whole of the University of Minnesota. He joined IonE late in 2011.

Gilbert's career as an academic entrepreneur has focused on the design, implementation and management of complex interdisciplinary activities in large research universities. He was a key architect in the creation of the Earth Institute at Columbia University and a central figure in the revitalization of the Nelson Institute at the University of Wisconsin-Madison. Among the major activities he has worked on are: creation of the International Research Institute for climate prediction, integration of CIESIN into the Earth Institute, creation of the Wisconsin Initiative on Climate Change Impacts, and evolution of the Wildlife Data Integration Network. He has also served as a consultant to Arizona State University, CINCS LLC and the Twycross Zoo.

#### **Troy Goodnough**

*Sustainability Director, Office of Sustainability, University of Minnesota, Morris*

Troy is the Director of the Office of Sustainability at the University of Minnesota-Morris in Western Minnesota.

The Morris Office of Sustainability has a vision to see the Morris campus and community grow as a model of sustainability principles, practice and excellence.

The office works collaboratively with students, faculty, staff, and community partners to advance our shared sustainability aspirations in the following areas: communication, accountability and reporting, communications and messaging, on-campus engagement, education and training, faculty and staff support, innovation of new programs, outreach and engagement, and creating culture change.

### **Kristen Iverson Poppleton**

*Director of Education, Will Steger Foundation*

Kristen began her work with the Will Steger Foundation as a participant in our first educator Summer Institute in 2006 and has authored several of WSF's curricula resources. Kristen oversees WSF Education Program, including curriculum and professional development, funding and partnerships.

Kristen's past work experience includes teaching Pre-K through graduate students and training formal and informal educators in environmental education and STEM; youth development; and long-term strategic planning. Kristen has led STEM focused youth groups and professional development to informal educators at the Science Museum of Minnesota's Kitty Andersen Youth Science Centre and Learning Technologies Centre, and taught environmental and climate education focused courses at Hamline University and the University of Minnesota.

Kristen spent many years as a naturalist at the International Wolf Centre and at a residential environmental education program in Cordoba, Argentina. Kristen's formal education includes a M.Ed. in environmental education and a M.S. in conservation biology from the University of Minnesota. Kristen loves spending time outside, especially "up North" with her husband, two children and their chocolate lab.

### **Beth Mercer-Taylor**

*Coordinator, Sustainability Education, Institute on the Environment, University of Minnesota*

Beth Mercer-Taylor is the [sustainability education](#) coordinator at the University of Minnesota, Twin Cities. She administers the Sustainability Studies Minor, an interdisciplinary, free-standing program with nearly 200 undergraduates enrolled.

Her work involves recruiting and advising students, creating community-building activities, coordinating the efforts of the curriculum committee that oversees the minor's academic program, and leading new initiatives related to sustainability on campus.

Mercer-Taylor has practiced commercial real estate and public finance law in Minneapolis and has worked as a land use planner and consultant in Berkeley, Calif. She holds a bachelor's degree from Amherst College, a master's from U.C. Berkeley's Goldman School of Public Policy, and a law degree from Valparaiso University. She, her husband and three children walk, bike or take the bus to jobs and school daily, participate in community gardening and, at home, try very hard to "make dirt, not waste."

### **Nicole Rom**

*Executive Director, Will Steger Foundation*

For over eight years Nicole has been leading the Will Steger Foundation. As the Executive Director, Nicole has built and sustained the organization by providing visioning and development activities for the organization and its education and policy programs.

Prior to working for WSF, Nicole managed the education programs for the National Wildlife Federation's Great Lakes office in Ann Arbor, MI. Nicole also has experience teaching undergraduate and graduate level courses in environmental education and climate change at the University of Michigan and Hamline University. Nicole served as an Environmental Educator with the U.S. Peace Corps in the Republic of Kazakhstan.

She received her M.S. in Environmental Policy, Behaviour, Education and Communication from the School of Natural Resources & Environment at the University of Michigan and a B.A. from Bates College. She was a 2010-2011 Humphrey Policy Fellow at the University of Minnesota's Humphrey School of Public Affairs. Nicole served on the Friends of the Boundary Waters Wilderness Board for

six years and various search committees, including the RE-AMP Network CEO and Minnesota Environmental Fund Executive Director. She joined the RE-AMP Steering Committee as an at-large member in December 2013. Nicole is passionate about the outdoors, loves the lakes in Minnesota, cycling and skiing.

**Attendance**

Regular attendance and punctuality are mandatory in order to earn full marks. The final grade will take into consideration preparation required for class (i.e. readings) and participation in class discussions. If you miss any meetings without an excused absence from the on-site director, your final grade will be dropped accordingly. In the case of absences, it is the student's responsibility to find out what information was given in class including any announcements made.

**Available Support Services**

The program is fully supported by University of Minnesota and students will have access to both academic and pastoral support. Students will have access to campus computing and library facilities to assist them with completing the program's required assessment.

**Contact Information**

For further information regarding this syllabus, please contact the Australian Institute for Mobility Overseas:

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