Introduction to the Graduate Colloquium in Sustainability (ENG 5530)

John W. Sutherland

September 4, 2007
Course Information

Course Personnel

Instructors
- Dr. John W. Sutherland (MTU)
- Dr. Hassan Mahadallah (SUBR)

Assistants
- Karl Haapala (ME-EM)
- Jill Jensen (ChemE)

Course Details

Time
- SUBR – 3:30-4:30 pm (Central), Tuesday
- MTU – 4:30-5:30 pm (Eastern), Tuesday

Location
- MTU – ME-EM Room 208
- SUBR – TBD

May be streamed live on the web – more details to follow

Course Website

www.me.mtu.edu/~jwsuther/colloquium
Course Information (cont’d)

Course Description
- Interdisciplinary/multidisciplinary
- Term projects
- Distance Learning format

Course Goals
- Promote awareness of state of the art research in sustainability.
- Promote consideration of impacts of sustainability research.
- Develop skills needed to be an effective professional

Attendance (50% of final grade)
- Compulsory for registered students and IGERT scholars

Term Projects (50% of final grade)
- Address a sustainability issue on campus at MTU or SUBR
## Proposed Course Schedule

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<th>Student Research</th>
<th>Professional Development</th>
<th>Faculty/Other</th>
<th>Project</th>
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Sustainable Futures Institute

Michigan Tech
Dept. of Mechanical Eng. – Eng. Mechanics
Project Deliverables

- **Project proposal (10%) – Sep. 18**
  - Brief background, project goals/timeline, and initial findings

- **Project presentations (20%)**
  - Project Update (10 min.) – Oct. 9
  - Final Presentation (20 min.) – Dec. 4 & 11

- **Final Report (20%) – Dec. 11**
  - Executive summary, introduction, problem definition, approach, results, discussion, conclusions, and opportunities for future work
Term Projects

- Defining the Michigan Tech Campus Carbon Footprint and Opportunities for Improvement
- Michigan Tech Sustainability Island Development (Second Life)
- Developing the Science of Sustainability
Team 1: Carbon Footprint

- Continue work of undergraduates on the Campus Carbon Calculator
  - http://www.cleanair-coolplanet.org/
  - What is carbon footprint of MTU?
  - Where should improvement efforts focus?

- What activities can be undertaken to reduce MTU’s carbon footprint?
  - How do these activities fit with on-going/future activities at MTU

- Groundwork to establish a campus Enterprise (beginning Fall 2008)
Team 2: Second Life

- Develop the “Sustainable Futures Island”
  - Purchased by Michigan Tech
  - Second Life 3-D Virtual World
  - www.secondlife.com

- “Team 2”
  - Content experts
  - Recruit company sponsors for the Island

- Husky Game Development Enterprise
  - Content builders

- How will the island be “sustained” beyond this term?
Team 3: Science of Sustainability

✓ Developing the science
  q What is required?
  q What do the traditional disciplines offer/contribute?
  q How will the traditional disciplines form a sustainability metadiscipline?
  q What role will sustainability scientists play in society?
  q Need to understand how EVERYTHING interacts – establish a model that ties everything together
Term Projects

✓ Students taking course for credit will lead projects
✓ They will ask for, and receive, support from other students in the class
✓ Project teams will arrange meetings with Dr. Sutherland to discuss progress on projects