

Introduction to Sustainability

Instructor: Dr. Steve Lindaas <http://web.mnstate.edu/lindaas>
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 Office Hours: see website

Official Course Description: This course introduces the concept of environmental sustainability using world environmental issues as a theme. We will examine how a variety of cultures utilize their resources and how these cultures approach sustainability. Using a systems approach we will explore current trends and discuss future scenarios. Relevant topics from business, politics, and the social and natural sciences will be covered as they relate to sustainability. The tradeoffs (environmental as well as economic) associated with generating and using various resources for different cultures will be examined. Finally, we will explore what actions are needed to work towards a sustainable future.

Prerequisites: This course makes use of algebra, trigonometry and statistics to quantify concepts. It is expected that you have completed or are co-enrolled in college algebra. If you have questions about the mathematical rigor expected this semester, please see the instructor.

Required Texts:

- **Thinking in Systems: A Primer** by Donella H. Meadows edited by Diana Wright, Chelsea Green (2008)
- **Stuff: The Secret Lives of Everyday Things** by Alan Thein Durning and John C. Ryan, Sightline Institute (1997)
- **The Nature of College** by James J. Farrell, Milkweed Editions (2010)
- **Supplemental Material** (as assigned)

Course Web Site: Course material is distributed online using D2L (see also instructor's site – <http://web.mnstate.edu/lindaas/phys140>). See instructor if you anticipate having difficulty accessing the internet.

Evaluation: Each component of the course counts as follows –

Informal Writing and Homework	Participation and Projects	Papers and Tests	Case Studies
30%	10%	30%	30%

Grades will be assigned on the absolute scale shown; pluses and minuses will be used for the top or bottom quarter of a bracket.

A	B	C	D	F
100-90%	89-80%	79-70%	69-60%	< 60%

Class Schedule:

Lecture: Tuesday and Thursday	12:00 to 1:15 pm	Hagen 305
We may have field trips or evening films or activities that will be offered throughout the semester. We realize that your schedule might not allow your attendance at all of these activities.		

Goals:

1. Demonstrate an understanding of systems thinking.
2. Understand the importance of air, water, energy and social equity.
3. Understand world natural sources and be able to evaluate finite and renewable resources.
4. Understand the exponential function and non-linear system effects.
5. Understand the influence of human activities on natural and managed ecosystems.

Course Components:

- **Informal Writing and Homework:** There will be a mixture of problems and reflection papers in response to readings. You are free (even encouraged) to collaborate on problems; however, work turned in should be your own. In the case of problems sets, all the problems may be graded or a subset will be graded and completeness checked. You will be assigned topics for response papers that might also be used for group discussions. More details will be given for each assignment. Late homework is generally not accepted.
- **Participation and Projects:** This course makes use of class discussions and group projects and hence your presence is expected. Please note that quality is more important than quantity of participation. Tours and films shown outside of class can contribute towards your participation.
- **Papers and Tests:** Exams may consist of a mixture of problems as well as questions based on class discussions. Partial credit will be given, but only if what you have written is logical and well organized. Make up exams will be given only in cases of documented emergencies.
- **Case Studies:** You will be working in teams on integrated case studies. Each completed case study will produce a product that may be shared with your peers and the wider community.
- **Academic Honesty:** Your education is only as good as your integrity. If you have any questions as to what is acceptable behavior see the instructor or review the MSUM Student Academic Policy in the Student Handbook: <http://www.mnstate.edu/sthandbook/> (Student Policy Info).
- **Universal Excuse Form (UEF):** Life happens – use this form to propose a solution – preferably prior to anticipated problems.

Official Course Objectives:

- Students will
 - Become aware of a variety of business, politics, and technology pertains to sustainability.
 - Develop an understanding of different cultures and their resource use patterns
 - Develop critical thinking skills through analysis, oral and written communication.
 - Develop estimating and unit analysis skills.
 - Become familiar with the scientific process.
 - Develop an awareness of socio-environmental synthesis
- Students will become aware of, and be able to articulate problems and solutions in the following:
 - Natural resources available to our civilization as it exists today.
 - Benefits and consequences of past resource use.
 - How resource use affects world ecosystems.
 - How past cultures have failed or survived based on their environmental stewardship.
 - How societies change and adapt to new paradigms
- Students will explore “How do I know what I know?”
- Students will learn to recognize valid sources of information and distinguish between valid and not valid arguments. Argument in this case is defined broadly to include logical reasoning, mathematical proofs, scientific reasoning, media analysis and other verbal and nonverbal communication.
- Students will practice constructing valid arguments

Special Accommodations: Minnesota State University Moorhead is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

- If you have, or think you may have, a disability (e.g. mental health, attentional, learning, chronic health, sensory or physical) please contact the DRC at (218) 477-4318 (V) or (800)627.3529 or 711 (MRS/TTY) to schedule an appointment for an intake.
- Additional information is available on the DRC website: <http://www.mnstate.edu/disability/>
- If you are registered with the DRC and have a current Accommodation Letter, please schedule an appointment to visit with me, during my office hours, to discuss implementation of your accommodations.

Sexual Violence: Acts of sexual violence are intolerable. MSUM expects all members of the campus community to act in a manner that does not infringe on the rights of others. We are committed to eliminating all acts of sexual violence.

MSUM faculty and staff are concerned about the well-being and development of our students. We are obligated to share information with the MSUM Title IX Coordinator in certain situations to help ensure that the students' safety and welfare is being addressed, consistent with the requirements of the law. These disclosures include but are not limited to reports of sexual assault, relationship violence, and stalking.

If you have experienced or know someone who has experienced sexual violence, services and resources are available. You may also choose to file a report. For further information, contact Lynn Peterson, Coordinator of Sexual Assault Services at Hendrix Clinic and Counseling Center, 218-477-2211, or Ashley Atteberry, Title IX Coordinator in Owens Hall 208 (218-477-2174; ashley.atteberry@mnstate.edu). Additional information is available at: www.mnstate.edu/titleix