

OBJECTIVES

Energy is all around us, fueling not just the cars we drive, but also the economy. It takes lots of energy to just make all the “stuff” we consume, much of which gets thrown away. The overall goal of this course is to emphasize the relationships between energy use, the economy, and the environment.

Specific objectives include:

- Understanding the basic principles associated with energy supply and demand, from both a scientific and economic perspective;
- Understanding of the tradeoffs associated with various energy sources in terms of environmental impact;
- Gaining the capability to obtain and analyze basic energy-related data;
- Participating in a service learning project to educate other students about campus energy use and its environmental impact; and
- Using the principles to conduct a thorough energy audit of a campus building as a group project.

COURSE SYLLABUS

Instructors: John D. Halfman, Lansing 112, x3918, e-mail “Halfman”, Wednesday and Thursday 4:30 – 6:00 p.m.
 Thomas Drennen, Stern 314, x3419, e-mail “Drennen”, Monday. 11:00 – 12:30 and Wed. 1:00 – 2:30.
 Required Texts: ENERGY: Its Use and the Environment, 4th ed., Hinrichs & Kleinback, ISBN 0-495-01085-5
The Energy Construct, Ben Cipiti, ISBN: 1-886-308-6235
 Other Readings: Tietenberg, Davidson, World Watch (WW), Technology Review (TR), Science (SC), Scientific American (SA), National Geographic (NG), and others to be handed out (h), put on blackboard (B), or available in electronic reserves (E)
 Electronic Access: Course documents are available on Blackboard.
 Class Meets: Tuesday & Thursday, 10:20 – 11:45 a.m., Stern 103; PLUS **Scheduled Field Trips (see **below)

SEMESTER OUTLINE

Week of	PSet	Tuesday	Thursday	Energy	Other
1/20 – 1/22	1	Intro & Energy Principles	Service Learning Basics: the SEAL....7		
1/27 – 2/29	2	Economic Principles	Environmental Economics.....Tietenberg (H)Davidson 4 (H)		
2/3 – 2/5	3	Electricity	**Coal Plant7.....		
WW 10-15 (BB)					
**Coal Plant Visit: February 5 10:20 am – 1 pm, Meet at Medbery Lot. During and after class time.					
2/10 – 2/12	4	Field Trip Discussion	Fossil Fuels/Resources.....8, 10,11.....	NG 84-109	
2/17 – 2/19	5	Air Pollution	Greenhouse Effect.....9.....		
2/24 – 2/26	6	Home Energy Use	Halfman’s New House		
**Halfman’s New House February 26, Class Time, Meet at Medbery Lot.					
3/3 – 3/5	none	President’s Climate Initiative	Recycling/Energy Use.....13,14.....	EPA	
3/10 – 3/12	7	Review/Discussion	EXAM I.....14,.....	5,6	
3/17 – 3/19	none	Spring Break	Spring Break		
3/24 – 3/26	8	Nuclear Energy/Waste	Energy Policy.....SC 1168-1179		
3/31 – 4/2	9	Solar, Geothermal	**Finger Lakes Institute (FLI)6,12,16,17.....		
**Finger Lakes Institute , 601 S Main Street, Geneva. April 2, Class Time, Meet at Institute					
4/7 – 4/9	Policy Memo	Wind/Hydro	Group Project.....12.....	Cipiti	
4/14 – 4/16	none	**Wind Farm Visit			
**Wind Farm Visit: Tuesday, April 14, 4:30 – 9:00 pm, Meet at Medbery Lot					
4/21 – 4/23	none	Hydrogen/Fuel Cells.....Burns et al.			
4/28 – 4/30	none	Group Project Presentations	Group Project Presentations		
Written Group Project Report (& copy) Due Friday 4 pm 5/1					

5/5 **none** Energy Futures no class
May 10 **FINAL EXAM** 3:00 – 6:00 p.m. Sunday, during scheduled final exam period.

COURSE GRADE

Your grade for the course will be divided as follows:

25%	Mid-Term Exam	20%	Weekly Problem Sets
25%	Final Exam	25%	Group Project
5%	Policy Memo		

A total score of 90% and above receives an A; whereas, 55% and below receives an F.

TWO EXAMS, WEEKLY PROBLEM SETS, POLICY MEMO, & GROUP PROJECT

Exam I:	Thursday, March 6 , during class time. Focuses on Class Material, Problem Sets, Field Trips & Readings.
Final Exam:	Tuesday, May 13 , 1:30 – 4:30 a.m., during scheduled Final Exam period. Comprehensive
Exam Style:	Definitions/Short-Answers/Problems/Essay Questions on class material, problems, field trips & readings. Closed Book/Closed Note, except for one page of formulas and equations.
Problem Sets:	Problem Solving Questions based on previous/current week's material. See PSet above. Focuses on numerical exercises and computer (spreadsheet) manipulation of data sets. Assigned on Thursday & due following Thursday at start of class. Open Book / Open Note / Work Together / Each Student Hands in Own Problem Set.
Policy Memo:	A three page, typed, policy memo on an assigned topic. Graphs and numerical analyses welcomed.
Group Project:	Problem Solving / Group Assignment. No more than 4 students / group. DUE Group's 5 minute Oral Presentation either 4/29 or 5/1, Written Report (two copies) due Fri., 5/1, 4 pm Open Book / Open Note / Work Together / One Report (& copy) and One Presentation per Group.

ATTENDANCE & OTHER POLICIES

You are expected to attend all classes and field trips. Regardless, you are responsible for all of the material presented in class, problem sets, field trips, outside activities and within the assigned readings. If anything about this course is confusing, PLEASE ask before the exam or project. Perfect attendance and active class participation will boost borderline grades. Field trips are an integral part of this course, you must attend and plan on agreeable weather. The field trips will leave before class starts, and may return after the class ends or go on a weekday afternoon/evening, or Saturday. Due to space limitations and other considerations, some field trips may be on an alternate date.

You are expected to take all exams **on time**, and turn in all assignments **on or before the due date**. Problem Sets, Exams and Group Activity **cannot** be made up except in extremely unusual circumstances, and then preferably in advance. Your grade for a late problem set will be penalized 10% for each day it is late. They are due on Thursday at start of class.

Many of the homework assignments require the use of Excel or some other spreadsheet program. If you don't already know how to use Excel, you must learn how. The course documents and materials will be available on Blackboard. As we'll send email on a regular basis, you must regularly access your HWS email account. We reserve the right to e-mail everyone with announcements, e.g., class discussion questions and problem set corrections.

You should bring a calculator to the exams. Numerical problems on the exams are graded on your method. A correct answer without a correct method receives **NO** credit. A correct method with an incorrect answer receives **very close to full** credit.
SHOW YOUR WORK.

All of the problem sets and class activities are group projects. Learn from other members in your group. As stated above, all problem sets requires individual reports. Feel free to solicit our advice. **SHOW YOUR WORK!**

Specific details in this syllabus may change but only after an announcement by one of us in class or by e-mail.

Please see us if you have any questions...