Lab Syllabus - Ecosphere in Crisis - Spring 2013

Walter Rainboth — Sections

The goal of the lab is to enhance your understanding of some of the most important subjects the course covers. Therefore, certain topics covered in lecture will be handled in greater detail with an emphasis on their significance to the lives of students of these sections. Things you learn about today will influence important decisions you make in years to come. Knowledge is the key. Decisions you make will make your life easier or more difficult. Understanding the long term is important.

For the subjects covered in lab, there will be readings posted on D2L the week before and there will also be Powerpoint files that can be printed out to help you follow the subject matter. However you will still need to take notes. Fill in the questions in the lab manual as we progress through the exercises. You do not have to hand them in, but the questions will help you review for the exams. All exams (60 pts each) and quizzes (10 pts each) are open book, but have time limits. It will not be possible to look up every answer and therefore it is best that are familiar with the material. There are 2 Exams, one at mid-term and a final exam at the finish.

There is an exercise in the lab manual to help you calculate and report your personal energy consumption. Data will be collected over the period of one week, and will be used to make an estimate of your annual consumption. Follow the instructions for reporting your results. An important aspect of science is taking data and reporting your results in a manner that can be easily checked by anyone who reviews the information and how you summarized it. The exercise is worth 30 pts or the equivalent of 3 quizzes.

This is a lab science course. There is a NO CUT policy for lab. I <u>will</u> take roll, and absentees will receive grade penalties.

My office hours are posted outside my lab at Halsey Science 52. I am most likely to be found in my lab when I am on campus. Make an appointment after lecture if you require some other time.

Dr. Walter Rainboth
tel: 424-0121 (office & lab)
52 Halsey Science
email: rainboth@uwosh.edu

Semester Schedule

Note that this schedule is tentative. Weather may intervene, or other potential sources of information or discussion may become available. Check your email.

Week 1 - **Subject:** Introduction to Science and the Scientific Method - presentation in lab + **Quiz**
28 Jan - 01 Feb Homework assignment discussion — Begin personal energy consumption exercise

Week 2 - **Subject:** The ways that humans interact with the environment. Problems and Penalties.
Reading - *Easter's End* by Jared Diamond + **Quiz**; **Video** - "The Environmental Revolution"
04 Feb - 08 Feb

Week 3 - **Subject:** Cooperation vs. competition for finite resources, and a real life example.
Reading - *Tragedy of the Commons* by Garrett Hardin + **Quiz**; **Video** - "The Last Harvest"
11 Feb - 15 Feb

Week 4 - **Subject:** Common resources, ignoring nature and avoiding any potential limits on resource use.
Video - "The Power of Water"; **Video** "Public Lands, Private Profits" + **Quiz**
18 Feb - 22 Feb

Week 5 - **Subject:** Serious problems with limited water resources.
Video - "Blue Gold - World Water Wars" Should resources critical for life be treated as commodities for the profits of a few? + **Quiz**
25 Feb - 01 Mar

Week 6 - **Subject:** Climate change, the unfolding of the science and some of the latest concerns.
Video - "What's Up with the Weather?" (1st half); **Video** - "Dimming the Sun" + **Quiz**
04 Mar - 08 Mar

Week 7 - **Mid-term exam**. Hand in energy consumption exercise; Producing food - can people and industry co-exist?
Reading - Where Have All The Farmers Gone? **Video** - "Save the Earth, Feed the World" + **Quiz**
11 Mar - 15 Mar

18 Mar - 22 Mar - Semester break week

Week 8 - **Subject:** Genetically Modified Organisms (GMOs) as food. Pesticides in Food
Video - "The World According to Monsanto"; "In Our Children's Food" Quiz
25 Mar - 29 Mar

Week 9 - **Subject:** Chemicals in the environment, their effects on animals and us. Carcinogens and hormonal mimics.
Videos - "Great Lakes, Bitter Legacy"; "Fooling with Nature"
1 Apr - 5 Apr

Week 10 - **Subject:** Fossil Energy - the latest way to mine natural gas.
Video - "Gasland: Can You Light Your Water On Fire?" + **Quiz**
8 Apr - 12 Apr

Week 11 - **Subject:** Changes in the Fox Valley as people move, and societies and lifestyles evolve.
Field Trip - History of the Fox Valley - Visits to Butte des Morts and Former Industrial Areas in Oshkosh.
15 Apr - 19 Apr

Week 12 - **Subject:** Ecology of Terrestrial Succession Patterns in Wisconsin Biotic Communities.
Field Trip - Waukau Creek Nature Preserve - town of Waukau
22 Apr - 26 Apr

Week 13 - **Subject:** Ecology of Aquatic Succession Patterns in Wisconsin Biotic Communities
Field Trip - Terrell's Island Restoration Project near Omro
29 Apr - 3 May

Week 14 - **Final Exam**
6 May - 10 May