**Ecosphere in Crisis Lab**

Biology 104, Section 1, Fall 2016

Mon. 9:10-12:10, 110 Halsey

Dr. Bob Stelzer

**Contact information:**

Office Hours Location Phone email

Tuesday 9:00-10:00 Halsey 150 424-0845 [stelzer@uwosh.edu](mailto:stelzer@uwosh.edu)

Thursday 12:00-1:00

and by appointment

## Objectives of Lab:

To gain a fuller understanding of how humans interact with their environment through participation in field & lab exercises and by reading and discussing articles treating various aspects of environmental science. Issues such as energy use and supply, global climate change, water quality, and biodiversity are becoming increasingly important for the livelihood of humans and for the sustainability of earth. We hope that by the end of Bio 104 you will be able to make more informed decisions about these issues.

## Lab Schedule:

You will learn more in lab and your grade will be better if you come to class prepared. Read through the exercises and other handouts ahead of time. Carefully read the papers for discussion and write down questions or comments that come to mind as you read the articles. These will give you a way to participate in the discussions.

**Point distribution:**

Lab Reports (2\*) 25%

Announced Quizzes (2) 45%

Data sets (2) 10%

Participation 20%

### Overview of lab activities

Lab reports are required for the two exercises in the schedule noted by asterisks. The two announced quizzes will be designed to test your comprehension of material covered in lab only (not lecture). The first announced quiz will cover all lab material prior to this quiz. The second announced quiz will cover all lab material since the first announced quiz. The data sets refer to data you will collect for two out-of-class exercises (Ecological Footprint, CO2 emissions). Your participation grade will be based on the quantity and the quality of your participation during discussions of papers and during lab exercises, and attendance.

Quizzes, lab reports and other field & lab activities must be done (or turned in the case of lab reports) at their scheduled times. Make-ups assignments will only be given if you provide a valid, documented excuse. Make-up assignments must be completed within one week of the missed activity. Late assignments will be docked 10% for each day they are late.

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| **Week** | **Activity** (FT = field trip) | **Reading Assignments** |
| Sept 5-9 | --------- |  |
| Sept  12-16 | Science, environmental science and small group discussions  Introduction to Ecological Footprint Exercise |  |
| Sept 19-23 | *Ecological Footprint Exercise* (data due Sept. 19)  Discuss papers  Introduction to *Forest Lab* | “Ecological footprints: evaluating sustainability” by Palmer and “Ecological footprint: a tool for measuring sustainable development” by Sonu and co-authors |
| Sept 26-30 | *FT- Forest Lab: Waukau Cr. Forest Preserve*\* |  |
| Oct 3-7 | Discuss results from Forest Lab  Introduction to stream ecology | “Where rivers are born” by Meyer and co-authors |
| Oct 10-14 | **Lab Report for *Forest Lab* due**  *FT- Stream Lab: invertebrate and water quality sampling in local streams* |  |
| Oct 17-21 | Introduction to lakes, nutrient limitation and water pollution  *FT- Lake Winnebago*  Nutrient Addition Experiment: set up | “Global nitrogen cycling out of control” by Fields and “Dead zones spreading in world oceans” by Dybas |
| Oct 24-28 | **Quiz 1**  Nutrient Addition Experiment: qualitative observation |  |
| Oct 31-Nov. 4 | Nutrient Addition Experiment: sample for algae  Introduction to solid waste management; discuss papers | “Recycling food waste 101” by Sullivan;  “Toward zero waste: composting and recycling for sustainable venue  based events” by Hottle et al. 2015” |
| Nov 7-11 | *FT- Material Recovery Center and Landfill in Appleton* |  |
| **Week** | **Activity** (FT = field trip) | **Reading Assignments** |
| Nov 14-18 | Nutrient Addition Experiment: quantitative and qualitative measurements of algae  Measurement of nitrate concentration in your drinking water |  |
| Nov 21-25 | Introduction to Biodigesters  **Nutrient Addition Experiment\* Lab Report Due** | “Case Study Primer for Participant Discussion:  Biodigesters and Biogas” by the Environmental Protection Agency 2012 |
| Nov 28-Dec. 2 | *FT- Tour of UW Oshkosh Biodigester* Introduction to *CO2 Emissions Lab*(data due Dec. 5) Discuss papers | “A climate repair manual” by Stix and “A plan to keep carbon in check” by Socolow and Pacala; |
| Dec. 5- Dec. 9 | Discuss results of *CO2 emissions Lab* and paper | Carbon tax or cap and trade paper TBA |
| Dec. 12-16 | **Quiz 2** |  |

**Where to find the lab descriptions and articles for discussion:**

All of these items will be posted as pdf files on D2L.

**Cell phones**

Cell phones or similar devices must be turned off and packed away at all times during all class activities including field trips. If you need to have a cell phone on for some urgent reason (e.g. to receive an emergency message during a field trip) you will need to ask about this ahead of time.

**Students with Disabilities:** Students who have physical or learning disabilities who wish to request academic adjustments should notify the Disabilities Office so that appropriate accommodations can be made. For more information call or visit the Counseling Center or Disabilities Services (**424-2404).**

**Academic Integrity:** If you decide to cheat on a quiz or to engage in other forms of academic misconduct (e.g. plagiarism) you will be subject to the Student Academic Disciplinary Procedures as outlined in the Student Disciplinary Code (<http://www.uwosh.edu/dean>). Under Chapter UWS 14 (Student Academic Disciplinary Procedures), “academic misconduct” means an act in which a student (UWS 14.03):

a) seeks to claim credit for the work or efforts of another without authorization or citation;

b) uses unauthorized materials or fabricated data in any academic exercise;

c) forges or falsifies academic documents or records;

d) intentionally impedes or damages the academic work of others;

e) engages in conduct aimed at making a false representation of a student’s academic performance; or

f) assists other students in any of these acts.