CENG 340 Environmental Engineering Laboratory Fall 2013

**Course**: CENG 340 Environmental Engineering Laboratory

**Lab Location:** Room 364 Breakiron Engineering Building

**Time**. Tuesdays, 8:00am, 10:00am, and 1:00pm

**Instructors**: Deborah Sills

215 Dana

Office Hours: M: 3-5pm, T: 3:30-5:30pm, Th: 9-11am, By

appointment

Matt Higgins

172 Breakiron

Office Hours: MW: 1-2pm, Th: 10-11, By appointment

**Laboratory Objectives**. During the semester, laboratory periods will be used to perform experiments that reinforce and/or illustrate concepts from the class. The period will also be used for field trips, lectures, discussions and a role-playing game about the cholera epidemic of 1854. Assignments will be expected for the experimental labs, and are discussed in more detail below.

**Laboratory Grade**. Your grades for lab will consist of lab assignments and attendance/ participation. There will not be a separate grade for the lab section itself. Rather, the lab contributes a percentage of your overall grade for CENG 340.

**Laboratory Assignments.** Most labs will be accompanied by an assignment. Since this course is not a W2 we will focus on creating high quality figures and analyzing data, but you will still be required to write relatively short memos as lab reports. You will receive a sample memo on the first day of class, as an example. In addition, you should follow the guidelines you received in CENG350 for technical writing. If you’re not taking CENG350, contact me, and I will give you a copy.

Laboratory assignments are due at the start of your lab period on the assigned date, and the same late work policy as employed in the lecture applies to this lab. Lab assignments will be individual assignments. You are expected to hand in independent work. While it is obvious that groups working together in the lab will share the same data, your analysis, presentation, and interpretation of the data should be your own. If you collaborate with a group member, such as discussing the results and what they mean, you should then put that into your own words for the assignment. Also, when turning in your assignment, list the students with whom you collaborated or discussed the assignment. The Honor Code and academic responsibility apply to the lab, just as they do to the lecture portion of the course.

**Laboratory Attendance.** Attendance in laboratory is mandatory. If you must miss a lab due to an extenuating circumstance or official event, you must receive prior written permission. You are responsible for the material covered during that lab period, as quiz and exam questions may be derived from the lab material.

**Role Playing.** London 1854: Cesspits, Cholera and Conflict over the Broad Street Pump (see attached sheet).

**Schedule**

Below is a tentative schedule for the semester’s labs. As with the course schedule, this may change as we progress through the semester.

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| **Session** | **LAB TOPIC** |
| 1 (9/3) | Lab safety, orientation, and data analysis – Prof. Sills |
| 2 (9/10) | Reaction Kinetics of Oxygen Uptake (Assignment due 9/17) – Prof. Higgins |
| 3 (9/17) | Non-linear Curve Fitting, Part 1 (Assignment due 9/24)– Prof. Sills |
| 4 (9/24) | Modeling Environmental Systems as Reactors, Part 1 – Prof. Higgins |
| 5 (10/1) | Modeling Environmental Systems as Reactors, Part 2 (Assignment due 10/8) – Prof. Higgins |
| 6 (10/8) | Non-linear Curve Fitting, Part 2 (Assignment Due 10/22)– Prof. Sills via Google Hangouts |
| (10/15) | No Lab: Fall Break |
| 7 (10/22) | Water Treatment Processes (Assignment due 10/29) – Prof. Higgins |
| 8 (10/29) | Drinking Water Treatment Plant Field Trip – Prof. Higgins |
| 9 (11/5) | Wastewater Plant Tour & Sample Collection (Assignment Due 11/12) – Prof. Sills |
| 10 (11/12) | Wastewater Analyses, Part 1: Biochemical Oxygen Demand and Filter Prep – Prof. Sills |
| 11 (11/19) | Wastewater Analyses, Part 2: BOD7, pH, TSS (Assignment due 11/26) – Prof. Sills |
| 12 (11/26) | Lycoming County Resource Mgmt Services Trip – Prof. Sills |
| 13 (12/3) | Role Playing (Cholera), Part 1 (Assignment due 12/3)– Prof. Sills |
| 14 (12/10) | Role Playing (Cholera), Part 2 (Assignment due 12/10)– Prof. Sills |