# EHS 100: Introduction to Environmental Health Sciences

**UCLA Fielding School of Public Health**

http://ccle.ucla.edu/course/view/16S-ENVHLT100-1

**Syllabus – Spring 2016 – Last Updated March 28, 2016**

**please note that this syllabus is subject to change – please check course website for updates**

## Course information

**Time**: Tues & Thurs. 1 pm – 2:50 pm
**Location**: 43-105 CHS


**Instructors:**

Hilary Godwin, PhD
Professor, Environmental Health Sciences
e-mail: hgodwin@ucla.edu
office: 16-032 CHS
office phone: 310-794-1238
cell: 818-239-6127
office hours: by appointment

Richard J Jackson MD MPH
Professor, Environmental Health Sciences
e-mail: dickjackson@ucla.edu
office: 51-297B
phone: 310-206-8522
office hours: by appointment

**Teaching Assistants:**

Olivia Ellis, MPH
e-mail: microlabrat@ucla.edu
office hours: by appointment

Tamanna Rahman, MPH
e-mail: shama15@ucla.edu
Office hours: by appointment


## Course Overview

In this class, you will obtain an introduction to current areas of research in, applications of, and methodologies used in the field of Environmental Health Sciences.

## Required Text & Individual Response Devices

Essentials of Environmental Health (Paperback)
by Robert H., Ph.D. Friis
Publisher: Jones & Bartlett Publishers; 2nd edition (2012)
ISBN-10: 9781284026337

Students are required to bring their clickers starting the first day of class in Week 1. You can use the iClicker+, iClicker or iClicker2 for participation. The web-based app (REEF Polling by i>clicker) can also be used if you have a compatible device and a sufficient WIFI connection. For iPhone and iPad users, search for REEF Polling in the Apple app store. For Android and laptop users, go to reef-education.com on your web browser and sign in. After you purchase a clicker OR the app then you need to register your iClicker ID on the CCLE course website before the start of class. There is a link on the right

panel of the course webpage for iClicker registration. We will show you where to register on the first day of class if you cannot find it on your own, or are not clear about what you need to do.

## Course Website

All homework assignments are posted on the course website which uses the Moodle platform (http://ccle.ucla.edu/course/view/16S-ENVHLT100-1). In addition, copies of the lecture (Powerpoint presentations) and any case studies/handouts will be posted on the course website AFTER each class. You should also check to make sure that you are able to access Turnitin.com for this course through my.ucla.edu as soon as possible. If you are unable to access either of these sites, please contact the instructor (hgodwin@ucla.edu).

## Recordings

Some (if not all) of the sessions of EHS 100 will be recorded during the quarter, which means that your voice and/or visuals of you may be captured during course recordings. These recordings will be made available for online viewing to students in the class afterwards. Recordings are a complement to attending class in person and are not intended as a replacement for active participation and engagement during class. Some of the benefits of having access to lectures online include allowing you to review material before quizzes, midterms and finals, to go over concepts you would like to reinforce after class on your own time, or to review areas you want more clarification on. We will keep you posted regarding how to access the recordings online, but they will most likely be made available via our course website: http://ccle.ucla.edu/course/view/16S-ENVHLT100-1

## Course Structure

The class meets from 1-2:50 Tuesdays and Thursdays. Please read all required readings prior to coming to each class. Reading Assignments are listed in the tentative course schedule found at the end of this syllabus; any updates will be posted on the course website (http://ccle.ucla.edu/course/view/16S-ENVHLT100-1).

## Course grading

There are five primary sources of evaluation for this class:

| | | |
|---|---|---|
| (1) | Homework Assignments (5) | 20% of total grade |
| (2) | Class participation (based on individual response units) | 10% |
| (3) | Midterm | 25% |
| (4) | Final Report & Group Presentation | 20% |
| (5) | Final Exam | 25% |

## Homework Assignments

There will be 5 homework assignments. You must submit your assignments electronically via the course website (http://ccle.ucla.edu/course/view/16S-ENVHLT100-1). Do NOT submit your assignments via email. All assignments must be submitted electronically prior to the beginning of class on Tuesday of the week that they are due. A 10% penalty (of the total possible points) will be deducted from late assignments for every day or partial day that the assignment is late. Late assignments will not be accepted after 3 days. All homework (unless otherwise specified in writing by the instructors) must be your own individual work (see **Academic Integrity,** below) and may NOT be completed in groups. When indicated on the assignment, homework assignments and the final report will be checked for authenticity using TurnItIn.com.

## Class Participation

For each topic covered in the course, there is a related case study, which you will work on in class in your assigned groups. Class participation points are based on your individual active participation on answering questions in class (usually related to the case studies) – you do not need to get the "correct" answer to get credit for participating on a given item, but you do need to "click in"/participate using your individual response unit (either iClicker or REEF) on 75% of the response questions on each day in order to receive credit for participation that day. You will be given two "free" days of participation points. This should account for any technical difficulties, absences, or forgetting your clicker. Each student is responsible for both bringing their response unit to class each day and making sure that it is working and appropriately registered.

## Midterm

There will be a midterm exam given in class (1-2:50 in 43-105 CHS) on Thursday, April 28th. The midterm exam will consist of 50 multiple choice questions and 10 short answer questions. In addition to the materials covered in class (both by the professors and by your classmates) and the Course Learning Objectives provided below, please see the Learning Objectives at the beginning of chapters 1-8 of *Essentials of Environmental Health*, by Robert H. Friis for material that will be covered on the midterm.

## Final Report and Group Presentation

The final report allows you to demonstrate your ability to develop and test a hypothesis about how a particular type of environmental insult impacts health. Projects will be developed in small groups (assigned at the beginning of the course) but each student is responsible for submitting their own written report (see website for required format for this assignment). The report must be written individually (i.e. each student writes his or her own report.) All reports must be submitted electronically to both Turnitin.com (see link from our course in my.ucla.edu or the block at the right side of the course website) AND the course website (http://ccle.ucla.edu/course/view/16S-ENVHLT100-1) prior to the beginning of class on Thursday, June 2nd, regardless of the day on which your group

is presenting. A 10% penalty (of the total possible points) will be deducted from late assignments for every day or partial day that the assignment is late. Late assignments will not be accepted after 3 days. The grade for this portion of the course will be based on the written report (individual), presentation (performed by group in class), and participation in peer review of other group presentations (submitted in class). Each group will be responsible for making a fifteen minute presentation of their final project using Powerpoint on either May 19, 24, 26 or 31. Please be sure to upload your Powerpoint presentation to the class website before class on the day that you are presenting. **PLEASE NOTE THAT ALL STUDENTS ARE EXPECTED TO ATTEND ALL GROUP PRESENTATIONS AND TO COMPLETE PEER REVIEW FORMS FOR EACH OF THE OTHER GROUPS.**

## Final Exam

There will be a final exam given during finals week: Thursday, June 9th, from 11:30 am – 2:30 pm in our regular classroom (43-105 CHS). The final exam will consist of 50 multiple choice questions and 10 short answer questions on topics primarily (but not exclusively) from the second half of the course (*i.e.,* after the midterm). In addition to the materials covered in class (both by the professors and by your classmates) and the Course Learning Objectives provided below, please see the Learning Objectives at the beginning of each chapter of *Essentials of Environmental Health*, by Robert H. Friis for material that will be covered on the final exam.

## Academic Integrity

All submitted work MUST BE YOUR OWN. Although you are encouraged to work on your final project in groups and may study in groups, all work submitted for a grade (Homework Assignments and Final Report) must be IN YOUR OWN WORDS AND PROPERLY CITED where appropriate. In addition, all examinations must be performed individually and are closed book. You are expected to read and follow the UCLA Student Conduct Code (http://www.deanofstudents.ucla.edu/conduct.html) and the guidelines from the Registrar's office on avoiding plagiarism (see (http://www.registrar.ucla.edu/soc/notices.htm#Anchor-Plagiarism-6296 and also http://www.library.ucla.edu/bruinsuccess/ ). If you are not sure whether a particular action is in violation of UCLA's standards of academic integrity or constitutes plagiarism, please contact the instructor and error on the side of caution. Ignorance of the University's policies is not a legitimate excuse for violating them. ALL VIOLATIONS OF THESE POLICIES WILL BE REFERRED IMMEDIATELY TO THE DEAN OF STUDENTS FOR REVIEW AND DISCIPLINARY ACTION.

## Learning Objectives and Competencies for EHS 100

Upon completion of this course, you should be able to demonstrate the skills listed as "Course Learning Objectives" below. These learning objectives were selected to help you build competencies required for the MPH program (see http://ph.ucla.edu/current-students/programmatic-competencies).

| ***COURSE LEARNING OBJECTIVES*** | ***HOW THESE LEARNING OBJECTIVES ALIGN WITH MPH CORE COMPETENCIES*** |
|---|---|
| 1. Given a specific environmental agent, use data sources to develop a concise summary of the agent's sources, basic attributes, and fate. | C1. Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.<br>C5. Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.<br>C9. Identify key sources of data and use existing databases to provide background or supportive data to address environmental health questions.<br>F14. Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health. |

| ***COURSE LEARNING OBJECTIVES*** | ***HOW THESE LEARNING OBJECTIVES ALIGN WITH MPH CORE COMPETENCIES*** |
|---|---|
| 2. Identify adverse effects of environmental agents on human health (both acute and chronic), on ecosystems, and on other risks (including economic and psychological), which requires an awareness of susceptibility, toxicity, and methods of risk analysis. | C1. Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.<br>C2. Describe physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.<br>C4. Specify current environmental risk assessment methods.<br>C6. Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.<br>C9.Identify key sources of data and use existing databases to provide background or supportive data to address environmental health questions.<br>F11. Articulate how biological, chemical and physical agents affect human health. |
| 3. Recommend systematic controls of environmental health hazards, demonstrating an awareness of state and federal regulatory programs. | C3. Describe federal and state regulatory programs, guidelines, and authorities that control environmental health issues.<br>C5. Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety. |
| 4. Develop a testable model of environmental insults as a means of improving forensic skills for assessing, preventing, and controlling hazards. | C5. Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.<br>C8. Develop a testable model of environmental insult.<br>F14. Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health. |

| ***COURSE LEARNING OBJECTIVES*** | ***HOW THESE LEARNING OBJECTIVES ALIGN WITH MPH CORE COMPETENCIES*** |
|---|---|
| 5. Accurately and effectively communicate environmental health risks to targeted stakeholders and explain why/whether some populations are at greater risk than others for specific agents. | C7. Discuss various risk management and risk communication approaches, including their relation to issues of environmental justice and equality.<br>F5. Demonstrate effective written and oral skills for communicating with different audiences in the context of professional public health activities. |
| 6. Describe an example of how regulations and/or inspections have been used to prevent environmental health problems; describe who has the authority to impose these regulations in our region. | C3. Describe federal and state regulatory programs, guidelines, and authorities that control environmental health issues. |

**EHS 100 Spring 2016**
**Tentative Course Schedule**
Class meets 1-2:50 am Tues, Thurs.
Lectures are in 43-105 CHS

| Date | Lecture Topic | Reading Assignment *(Read before class)* | Homework Assignment *(Must be submitted electronically before the beginning of class on day indicated)* |
|---|---|---|---|
| **Tues., March 29th** | Introduction to Environmental Health Sciences; Overview of Course Format and Learning Objectives (*Godwin*) | Friis: Chapter 1 | |
| **Thurs., March 31st** | Environmental Toxicology (*Godwin*) | Friis: Chapter 3 | |
| **Tues., April 5th** | Environmental Epidemiology (*Jackson*) | Friis: Chapter 2 | *Homework Assignment 1: Developing a Hypothesis* |
| **Thurs., April 7th** | Environmental Policy and Regulation (*Jackson*) | Friis: Chapter 4 | |
| **Tues., April 12th** | Agents of Environmental Disease: Zoonotic and Vector-Borne Diseases (*Jackson*) | Friis: Chapter 5 | Homework Assignment 2: Literature Search Related to Your Hypothesis |
| **Thurs., April 14th** | Agents of Environmental Disease: Toxic Metals and Elements (*Godwin*) | Friis: Chapter 6 | |
| **Tues., April 19th** | Agents of Environmental Disease: Pesticides and Other Organic Chemicals (*Jackson*) | Friis: Chapter 7 | *Homework Assignment 3: Summary of a Literature Article Related to Your Hypothesis* |

| Date | Lecture Topic | Reading Assignment *(Read before class)* | Homework Assignment *(Must be submitted electronically before the beginning of class on day indicated)* |
|---|---|---|---|
| **Thurs., April 21st** | Agents of Environmental Disease: Ionizing and Nonionizing Radiation (*Jackson*) | Friis: Chapter 8 | |
| **Tues., April 26th** | Review for Midterm (*Godwin*) | | |
| **Thurs April 28th** | **MIDTERM** (*Godwin and TAs proctoring*) | | |
| **Tues., May 3rd** | Applications of Environmental Health: Water Quality (*Godwin*) | Friis: Chapter 9 | *Homework Assignment 4: Selecting a Hypothesis to Test as a Group* |
| **Thurs., May 5th** | Applications of Environmental Health: Air Quality (*Jackson*) | Friis: Chapter 10 | |
| **Tues., May 10th** | Applications of Environmental Health: Food Safety (*Jackson*) | Friis: Chapter 11 | *Homework Assignment 5: Finding Data to Confirm or Refute Your Hypothesis* |
| **Thurs., May 12th** | Applications of Environmental Health: Solid and Liquid Wastes (*Godwin*) | Friis: Chapter 12 | |
| **Tues., May 17th** | Applications of Environmental Health: Occupational Health (*Godwin*) | Friis: Chapter 13 | |

| **Date** | **Lecture Topic** | **Reading Assignment** *(Read before class)* | **Homework Assignment** *(Must be submitted electronically before the beginning of class on day indicated)* |
|---|---|---|---|
| **Thurs., May 19th** | IN CLASS PRESENTATIONS (*Godwin, Jackson and TAs present; entire class must attend*) | | *If you are presenting, upload your Powerpoint presentation before class* |
| **Tues., May 24th** | IN CLASS PRESENTATIONS (*Jackson and TAs present; entire class must attend*) | | *If you are presenting, upload your Powerpoint presentation before class* |
| **Thurs., May 26th** | IN CLASS PRESENTATIONS (*Jackson and TAs present; entire class must attend*) | | *If you are presenting, upload your Powerpoint presentation before class* |
| **Tues., May 31st** | IN CLASS PRESENTATIONS (*Godwin and TAs present; entire class must attend*) | | *If you are presenting, upload your Powerpoint presentation before class* |
| **Thurs., June 2nd** | SUMMARY/ REVIEW FOR FINAL (*Godwin*) | | *Final Written Report due (all students)* |
| **Thurs., June 9th** | **FINAL EXAM 11:30 am – 2:30 pm** (*Godwin and TAs proctoring*) 43-105 CHS | | |