

**ENVH 516 – ENVIRONMENTAL AND OCCUPATIONAL TOXICOLOGY III**  
**Spring Quarter, 2009 – Dr. Lucio G. Costa**

**Course Objectives:** This is the third course of the core toxicology series, together with ENVH 514 (Dr. Zhengui Xia) and ENVH 515 (Dr. Terry Kavanagh). The third quarter of this series is organized with sections pertaining to the toxicology of chemical, physical and biological agents (e.g. metals, solvents, pesticides, radiation, food born toxicants, natural toxins, air pollutants) as well as lectures on ecotoxicology and forensic, occupational and clinical toxicology.

After completion of the course students will have a fundamental understanding of the toxicology of different agents. They should be able to identify major issues related to the toxicity of environmental agents, recognize toxic effects induced by these agents, explain mechanisms of toxicity, identify routes and nature of exposures, evaluate types of toxic effects, have a basic understanding of the main aspects of ecotoxicology, forensic toxicology, occupational toxicology and clinical toxicology, are their role within toxicology, public health and environmental and occupational health sciences.

**Guest lecturers** will be a valuable asset to the course and will assist in providing coverage of subject areas within their respective areas of expertise.

**Intended Student Audience:** The ENVH 514/515/516 course sequence serves as the core of the graduate toxicology program for both Toxicology MS and PhD students in the Department of Environmental and Occupational Health Sciences. Graduate students from other DEOHS programs, including MPH students, and from other allied biomedical science departments sharing an interest in toxicology, are encouraged to register. Prerequisites for this class include undergraduate general biology, organic chemistry, and biochemistry. Previous background in mammalian physiology is strongly recommended.

**Required Readings:** The textbook for ENVH 516 is Casarett and Doull's Toxicology. The Basic Science of Poisons, 2008 Edition. Chapters in this textbook cover most topics taught in the class. Additional reading material, handouts etc. will be distributed at each class by the instructor.

**Review Sessions:** Before each exam, on Thursday from 11:30-12:20, a discussion review session will be held. These sessions will provide a review of the class material, together with a forum for questions/discussion of major topic covered in the exam.

**Exams and Assignments:** There will be a mid-term and a final in-class written exam (essay-type questions) of the duration of 50 min each. Each exam will cover all material presented in the preceding lectures. The final exam will be held during finals week but will not be a cumulative exam.

**Grading:** The final grade is compiled from the average of the two in-class exams.

**ENVIRONMENTAL AND OCCUPATIONAL TOXICOLOGY III (ENVH 516)**

Spring Quarter 2009 MWF 1:30-2:20 Room T531 HSB

Th 11:30-12:20 Room T531 HSB

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Date	Topic	Instructor	Reading*
March 30	Pesticides	Costa	Chapter 22
April 1	Pesticides	Costa	Chapter 22
3	Pesticides	Costa	Chapter 22
6	Pesticides	Costa	Chapter 22
8	Herbicides	Eaton	Chapter 22
10	PCBs	Kelly	Handout
13	Dioxins	Kelly	Handout
15	Radiation	Griffith	Chapter 25
16 Th	Review session	Pizzurro/Costa	
17	EXAM 1 (through 4/15)	Costa/Pizzurro	
20	Solvents	Costa	Chapter 24
22	Solvents	Pizzurro	Chapter 24
24	Solvents	Costa	Chapter 24
27	Brominated flame retardants	Costa	Handout
29	Ecotoxicology	Gallagher	Chapter 29
May 1	Metals	Woods	Chapter 23
4	Metals	Woods	Chapter 23
6	Metals	Woods	Chapter 23
8	Metals	Woods	Chapter 23
11	Air pollutants	Koenig	Chapter 28
13	Air Pollutants	Koenig	Chapter 28
14 Th	Review session	Pizzurro/Costa	
15	Air pollutants	Koenig	Chapter 28
18	EXAM 2 (through 5/8)	Costa/Pizzurro	
20	Plant & Animal toxins	Guizzetti	Chapter 27
22	Plant & Animal toxins	Guizzetti	Chapter 27
25	HOLIDAY	-----	
27	Food toxicology	Costa	Chapter 30
29	Food toxicology	Samadpour	Chapter 30
June 1	Occupational Toxicology	Firestone	Chapter 33
3	Clinical toxicology	Martin	Chapter 32
4	Review session	Pizzurro/Costa	
5	Clinical toxicology	Martin	Chapter 32
8-12	EXAM 3	Costa/Pizzurro	

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\* Casarett and Doull's Toxicology. 7<sup>th</sup> Edition, 2008.