

TOXIC AGENTS: EFFECTS AND MECHANISMS (ENVH 516)

Spring Quarter 2018 MWF 8:30-9:20; Room R212 (4225 Roosevelt)

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| Date | Topic | Instructor | Reading* |
|------------|-------------------------|----------------------|------------|
| March 26 M | Metals | Lewandowski | Chapter 23 |
| 28 W | Metals | Lewandowski | Chapter 23 |
| 30 F | Metals | Lewandowski | Chapter 23 |
| April 2 M | Metals | Lewandowski | Chapter 23 |
| 4 W | Air pollutants | Kavanagh | Chapter 29 |
| 6 F | Air pollutants | Vedal | Chapter 29 |
| 9 M | Air pollutants | Cole | Chapter 29 |
| 11 W | Pesticides | Costa | Chapter 22 |
| 13 F | Pesticides | Costa | Chapter 22 |
| 16 M | Pesticides | Costa | Chapter 22 |
| 18 W | Pesticides | Costa | Chapter 22 |
| 20 F | Herbicides | Eaton | Chapter 22 |
| 23 M | Animal & Plant Toxins | Roque | Chapter 26 |
| 25 W | Animal & Plant Toxins | Roque | Chapter 26 |
| 27 F | PCBs | Kelly | Handout |
| 30 M | Dioxins | Kelly | Handout |
| May 2 W | Mid-term Exam | Costa/Garrick/Coburn | ----- |
| 4 F | Food additives | Costa | Chapter 31 |
| 7 L | PBDE | Costa | Handout |
| 9 W | Solvents | Costa | Chapter 24 |
| 11 F | Solvents | Costa | Chapter 24 |
| 14 M | Solvents | Garrick | Chapter 24 |
| 16 W | Food Toxicology | Hill | Chapter 31 |
| 18 F | Drugs of abuse | Coburn | Handout |
| 21 M | Phthalates/bisphenol A | Sathyanarayana | Handout |
| 23 W | Radiation | Griffith | Chapter 25 |
| 25 F | Nanomaterials | Carosino | Chapter 28 |
| 28 M | HOLIDAY | Memorial Day | ----- |
| 30 W | Occupational toxicology | Spector | Chapter 34 |
| June 1 F | Ecotoxicology | Gallagher | Chapter 30 |
| 4-8 | FINAL EXAM | Costa/Garrick/Coburn | ----- |

* Casarett and Doull's Toxicology. 8th Edition, 2013.

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Course Objectives: This course (previously Environmental and Occupational Toxicology III) is the third course of the core toxicology series. The content of the course focusses on the most important classes of toxic chemicals (as well as physical and biological agents), their toxic effects in humans and animals and the underlying mechanisms. The lectures will cover the toxicology of metals, solvents, pesticides, dioxins and other halogenated contaminants, radiation, food-borne toxicants, natural toxins, and air pollutants.

After completion of the course students will have acquired a fundamental understanding of the toxic effects of different agents. They will 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, 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: While 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, ENVH 516 is open to all graduate students from other DEOHS programs, including MPH students, and from other allied biomedical science departments (e.g. pharmacy, pharmacology, fisheries, neurobiology etc.). Prerequisites for this class include undergraduate general biology, organic chemistry, and biochemistry. Previous background in mammalian physiology is recommended.

Required Readings: The textbook for ENVH 516 is Casarett and Doull's Toxicology. The Basic Science of Poisons, 2013 Edition. Chapters in this textbook cover most topics taught in the class. Additional reading material, handouts with slides, etc. will be e-mailed to each student ahead of the class and/or distributed at each class by the instructor.

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.

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Academic Integrity: Students at the University of Washington are expected to maintain the highest standard of academic conduct, professional honesty, and personal integrity. The UW School of Public Health is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the UW Student Conduct Code (WAC 478-120). We expect you to know and follow the University's policies on cheating and plagiarism, and the SPH Academic Integrity Policy (<http://sph.washington.edu/students/academicintegrity/>). Any suspected case of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standard and Student Conduct website.

Disability Resources: Your experience in the class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course. If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but are not limited to mental health, attention-related, learning, vision, hearing, physical or health impact), you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or disability.uw.edu. DRS offers resources and coordinates reasonable accommodations for students with disabilities or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.