

ENVH 531 NEUROTOXICOLOGY

Winter Quarter 2020 T & Th 3:30-4:50; Roosevelt I, R212

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Date		Topic	Instructor
January	7	Introduction	Costa
	9	Manifestations & mechanisms I	Costa
	14	Manifestations & mechanisms II	Costa
	16	Astrocytes, microglia and neuroinflammation	Cole
	21	Neuronal death and neurogenesis	Wang
	23	The microbiome and neurotoxicity	Cui
	28	Environment and PD	Costa-Mallen
	30	Environment and AD	Kukull
February	4	Environment and ASD	Chang
	6	Behavioral Tox/Teratol	Cole
	11	Behavioral Tox/Teratol	Burbacher
	13	Case study: ethanol	Costa
	18	Case study: OPs	Costa
	20	Case study: Acrylamide	Costa
	25	Case study: air pollution	Cole
	27	Case study: Domoic acid	Petroff
March	3	Case study: MeHg	Ponce
	5	Student presentations	Costa/Cole
	10	Student presentations	Costa/Cole
	12	Student presentations	Costa/Cole
	13	FINAL EXAM 8:30-10:30 R2228	Costa/Cole

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Course Objectives: The main objective of this advanced toxicology class is to provide a more in depth coverage of various areas of neurotoxicology. After completion of the course students will have a fundamental understanding of the principles and issues of neurotoxicology. They should be able to define neurotoxicity, recognize neurotoxic symptoms, explain mechanisms of neurotoxicity, identify the major classes of neurotoxic chemicals, evaluate types of neurotoxic effects, discuss the effects and mechanisms of major neurotoxicants, discuss the role of neurotoxicants in neurodevelopmental and neurodegenerative diseases, and illustrate the role of neurotoxicology in 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 topics within their respective areas of expertise.

Intended Student Audience and prerequisites: Master and PhD students in the Department of Environmental and Occupational Health Sciences and graduate students from other DEOHS programs, and from other allied biomedical science schools and departments sharing an interest in toxicology, are the main audience for this class. This would include students from the Schools of Fisheries, Pharmacy, Oceanography, and Environment, from the programs in Neurobiology and Cellular and Molecular Biology, and from the Depts. of Pharmacology, Pathology, Physiology and Biophysics, or Biochemistry. Prerequisites for this class include courses in general biology, chemistry, and biochemistry. Some basic knowledge of neuroscience would be useful.

Readings: Handouts and eventual additional reading material will be distributed at each class by the instructor.

Course credits and organization: The class will be offered for 3 credits with two 80 minute lectures per week (Tuesday and Thursday 3:30-4:50). Shortly after the beginning of the course students are expected to choose a topic for an oral presentation. A list of possible topics will be discussed, however, students are encouraged to propose additional topics and themes and discuss them with the instructor. The purpose of the oral presentation (~20 -30 min) is to focus on specific aspects of neurotoxicology not covered in class. A discussion will follow.

Each student should provide a copy of the Power-point presentation to the instructor (by e-mail) and possibly a print-out for the other students.

A final exam will consist of three-four essay questions on topics covered in the course.

Grading: The final grade will be based of the following: final exam (50%), oral presentation (35%), and class participation (15%).

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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.

Religious Accommodation: Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at [Religious Accommodations Policy](#). Accommodations must be requested within the first two weeks of this course using [the Religious Accommodations Request form](#).”