ENVH 531 – NEUROTOXICOLOGY

Winter Quarter, 2014 – Dr. Lucio G. Costa
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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 neurodegenerative diseases, and illustrate the role of neurotoxicoloy 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 subject areas within their respective areas of expertise.

Intended Student Audience and prerequisites: MS and PhD students in the Department of Environmental and Occupational Health Sciences. Graduate students from other DEOHS programs, and from other allied biomedical science departments sharing an interest in toxicology, are encouraged to register. 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. Toward 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 assay 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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Winter Quarter 2014 T & Th 2:30-3:50; HSB, Room T360 (except 2/6, 2/18, 3/13)

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Date		Topic	Instructor
January	7	Introduction	Costa
	9	Manifestations & mechanisms I	Costa
	14	Manifestations & mechanisms II	Costa
	16	Neuronal death	Xia
	21	Glia and neurotoxicity	Roquè
	23	Environment and PD	Costa-Mallen
	28	Environment and AD	Kukull
	30	Behavioral Tox/Teratol	Cole
February	4	Behavioral Tox/Teratol	Burbacher
	6	Case study: air pollution	Cole **(RR134)**
	11	Case study: ethanol	Costa
	13	Case study: OPs	Costa
	18	Case study: Acrylamide	Costa **(T478)**
	20	In vitro neurotoxicology	Costa
	25	Case study: MeHg	Burbacher
	27	Case study: MeHg	Ponce
March	4	Student presentations	Costa/Cole/Roquè
	6	Student presentations	Costa/Cole/Roquè
	11	Student presentations	Costa/Cole/Roquè
	13	Student presentations	Costa/Cole/Roquè **(RR134)**
	17-21	FINAL EXAM	Costa