Georgia Institute of Technology

Aquatic Toxicology
BIOL 6628
FALL 2001

Syllabus

Course Objectives:

To introduce you to the principles of aquatic toxicology including: the biological effects of toxicants in aquatic environments, routes of exposure, biotransformations, mechanisms of toxic action, factors modifying toxicity, techniques for measuring toxicity including acute, chronic, behavioral, and biomarker tests, bioaccumulation of pesticides and metals, endocrine disruptors, and methods of ecological risk assessment.

Text:

Newman, M.C. 1998. *Fundamentals of Ecotoxicology*, Ann Arbor Press, Chelsea, MI.

Course Format:

Course material will be presented in a lecture/discussion format with a 1! hour lecture TTh. Questions during lecture are encouraged as they often help to clarify points and can lead into interesting areas for further exploration. Graduate students also will be assigned to lead discussions of a research paper. Your performance as group leader will be evaluated on your ability to stimulate discussion, lead it into productive areas, and clarify misunderstandings. All students will be evaluated on their contributions to the discussions.

Grades:

There will be two tests: a midterm (35%) and a final exam (35%) covering material presented in lecture and the reading assignments. Your performance on these tests will determine 70% of your final grade. The remaining 30% will be determined by your participation in discussions and performance as a discussion leader. If you miss an examination, you must contact the instructor within three days to discuss the possibility of a make-up. Your conduct in this course is expected to conform to the Student Honor Code (http://www.honor.gatech.edu/). I urge you to consult this for a full definition of your rights and responsibilities. Grades will be assigned according to the following scale: 90-100 A, 80-89 B, 70-79 C, 60-69 D, below 60 F.

Attendance:

Attendance of all lectures is strongly encouraged since material not covered in the reading assignments will be presented. Also you must be present to participate in discussions which make up 30% of your grade. Class attendance is mandatory for all exams and discussion sessions.

Office Hours:

Dr. Terry W. Snell
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e-mail terry.snell@biology.gatech.edu
Office Hours: Monday, Wednesday 1-2, Tuesday 3-4

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Class Schedule

DATE	TOPIC	READING ASSIGNMENT*
Aug 21, 23	Scope and history of aquatic toxicology Evolutionary context of the stress response	Chapter 1, 2
Aug 28, 30	Toxicants and toxicity	3
Sept 4, 6	Environmental fate of toxicants	4
Sept 11, 13	Routes of exposure	5
Sept 18, 20	Mechanisms of toxic action – general narcosis	6
Sept 25, 27	Mechanisms of toxic action – receptor mediated	7
Oct 2, 4	Biotransformations – **Midterm Exam**	8
Oct 9, 11	Factors modifying toxicity	9
Oct 18	Assessing toxicity in aquatic environments	10
Oct 23, 25	Measuring toxicity – acute tests	11
Oct 30, Nov 1	Measuring toxicity-chronic tests	11
Nov 6, 8	Biomarkers	12
Nov 13, 15	Toxicity Identification Evaluations	12
Nov 20	Endocrine disruptors	13
Nov 27, 29	Ecological risk assessment	13
Dec 4, 6	Ecological risk assessment	15

FINAL EXAM: Tuesday, Dec 11, 2:50-5:40 pm

* Newman 1998

Important Web Sites:

ToxNet: http://ace.orst.edu/info/extoxnet

Nat. Toxicology Program: http://ntp-server.niehs.nih.gov

ToxFaqs: http://atsdr1.atsdr.cdc.gov:8080/toxfaq.html
Aquire: http://www.epa.gov/ecotox/
Ecotox Simulations: http://www.ent3.orst.edu/PondFX/

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Discussion Schedule

Aug 28 _____SNELL_____

Sept 4 _____

Sept 11 _____

Sept 18 _____

Sept 25 _____

Oct 2 _____

Oct 9 _____

Oct 16 _____

Oct 23 _____

Oct 30 _____

Nov 6 _____

Nov 13 _____ no paper _____

Nov 20 _____no paper _____

Nov 27 _____ no paper _____

Dec 4 _____ no paper _____