BIOL 4235.01
Environmental Toxicology
Spring 2012

Class meetings: **Mondays and Wednesdays 5:30 – 6:50pm; Bayou Building 2311**
Instructor: Dr. Cindy Howard
Office: Bayou Bldg., Faculty Suite 3525
Telephone: (281) 283-3745 (please leave a message if you don't get an answer)
E-mail: howardc@uhcl.edu (best way to contact me)
Office hours: Mon 2-5pm, Wed 4-5pm; other times by appointment
Webpage: http://sce.uhcl.edu/howard/

Course text and materials

Klaassen, C.D. and J.B. Watkins III. 2003. ***Casarett and Doull's Essentials of Toxicology***. MacGraw-Hill, Inc., New York. 533 pp. ISBN 0-07-138914-8.

PowerPoint slides for each lecture, as well as practice problems and other course information will be available at least one day before each class session in the course Blackboard shell (accessible online your Blackboard account).

Prerequisites

General biology and chemistry are required; completion of courses in organic chemistry, biochemistry and/or physiology extremely helpful.

Course objectives

To provide students with a working knowledge of environmental toxicology that includes (1) how toxicants are absorbed, distributed, biotransformed and excreted by the body, (2) the processes of chemical carcinogenesis, mutagenesis and teratogenesis, (3) methods for testing chemical toxicity, and (4) effects of specific environmental toxicants (e.g., metals, pesticides, solvents, air and water pollutants).

Learning outcomes

Upon successful completion of this course, students will be able to understand and analyze the adverse effects of chemicals on normal physiological and biochemical processes in the body, interpret the effects of environmental toxicants, calculate dose-response curves, and apply this knowledge to human health and industrial hygiene.

Course format

Class lectures, study of text materials and discussion of current topics in environmental toxicology. Lectures and handouts cover material that originates from the textbook.

Evaluation

Three exams will be given during the term. Each exam will cover the material presented in lectures, handouts and readings from the textbook. All exams in this course will require students provide a full-size (8½ x 11", blue, Form #4521) scantron, pencil and calculator. Exams will consist of problem solving, as well as objective and short answer questions. An optional, comprehensive final will be available at the end of the course for students who would like to replace their lowest regular exam score. *There will be no make-up exams or make-up assignments accepted*.

Exam I	30%
Exam II	30%
Exam III	40%
	100%

Grading scale

A	92-100%	B-	78-79%	D+	66-67%
A-	88-91%	C+	76-77%	D	60-65%
B+	86-87%	C	70-75%	D-	58-59%
B	80-85%	C-	68-69%	F	<58%

All students are expected to take exams on the dates scheduled on the syllabus. There will be no scheduled extra credit assignments in this course.

Class attendance
Class attendance is strongly recommended. Handout materials will be available online; however, the handouts represent outlines of lecture material and do not contain sufficient information to succeed on exams without additional lecture notes.

Information on university closures due to weather or other events can be obtained from the UHCL hotline (281-283-2221) or http://www.uhclemergency.info/go/site/1522/ .

The course instructor will send messages to students during the semester regarding class schedule updates or changes, using the students' university email accounts.

Incompletes and withdrawals
The last date to drop this course without a grade penalty is **April 23, 2012.** In accordance with UHCL policy, an incomplete (I) grade can be assigned only if the student is making satisfactory progress, but cannot complete the course for an acceptable, documentable reason. Other course incompletions will result in a grade of F.

6 drop rule limitation
Students who entered college for the first time in Fall 2007 or later should be aware of the course drop limitation imposed by the Texas Legislature. Dropping this or any other course between the first day of class and the census date for the semester/session does not affect your 6 drop rule count. Dropping a course between the census date and the last day to drop a class (March 28) for the semester/session will count as one of your six permitted drops. You should take this into consideration before dropping this or any other course. Visit www.uhcl.edu/records for more information on the 6 drop rule and the census date information for the semester/session.

Academic honesty
Please carefully review the UHCL Academic Honesty Policy in the current UHCL catalog. Every student enrolled in this class is expected to abide by the UHCL Honesty Code, which states, "I will be honest in all my academic activities and will not tolerate dishonesty." Your participation in this class constitutes your acceptance of the UHCL Academic Honesty Policy. Dishonesty of any kind (e.g., plagiarism, cheating on exams) is absolutely unacceptable in this course. All academic code violations will be reported to the Dean of Students and can result in a grade of "F" on an assignment or test, a grade of "F" in the course or suspension from the university (see catalog). Your written work may be checked for plagiarism at any time. For the full UHCL Academic Honesty Policy, please refer to http://prtl.uhcl.edu/portal/page/portal/PRV/FORMS_POLICY_PROCEDURES/STUDENT_POLICIES/Academic_Honesty_Policy.

Special academic accommodations
Students requiring special academic accommodations with regard to exams, etc. should contact the Disabilities Services Office at 281-283-2627 (http://prtl.uhcl.edu/portal/page/portal/UAO).

Electronics
Use of cell phones, pagers, PDAs, laptop / notebook computers or similar electronic devices is generally not permitted during class periods. Cell phones must be silenced or turned off and must be stored out of sight for the duration of the class period. Exceptions may be made on a per class period basis and must be cleared with the course instructor prior to the start of class.

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Course schedule (subject to revision):

Date	Topic	Reading assignment (Klaassen and Watkins 2003)
W 01/18	Course introduction	
M 01/23	History and scope of toxicology	Chp. 1
W 01/25	General principles of toxicology; dose-response relationships	Chp. 2
M 01/30	Toxicant transport; absorption of toxicants	Chp. 5
W 02/01	Distribution and excretion of toxicants	Chp. 5
M 02/06	Biotransformation of xenobiotics: nonsynthetic reactions	Chp. 6
W 02/08	Biotransformation of xenobiotics: conjugation reactions	Chp. 6
M 02/13	*Review for Exam 1*	
W 02/15	**Exam 1**	
M 02/20	Factors influencing toxicity	
W 02/22	Conventional toxicity test methods	Chp. 2
M 02/27	Chemical carcinogenesis	Chp. 8
W 02/29	Chemical carcinogenesis	Chp. 8
M 03/05	Genetic toxicology	Chp. 9
W 03/07	Developmental toxicology	Chp. 10
M 03/12	*Spring break: no class*	
W 03/14	*Spring break: no class*	
M 03/19	Target organ toxicology	Chps. 11-16, 19
W 03/21	**Exam 2**	
M 03/26	Toxicology of food additives and contaminants	Chp. 30
W 03/28	Toxicology of food additives and contaminants	Chp. 30
M 04/02	Toxicology of pesticides	Chp. 22
W 04/04	Toxicology of pesticides	Chp. 22
M 04/09	Toxicology of heavy metals	Chp. 23
W 04/11	Toxicology of heavy metals	Chp. 23
M 04/16	Toxicology of organic solvents and vapors	Chp. 24
W 04/18	Air pollutants and acid precipitation	Chp. 23
M 04/23	Water pollutants and ecotoxicology	Chps. 23, 29
W 04/25	*Review for Exam 3*	
M 04/30	**Exam 3**	
W 05/02	**Optional Comprehensive Final (replaces lowest exam score)**	