New Course Request

Indiana University

Indianapolis Campus

Check Appropriate Boxes: Undergraduate credit ☑️ Graduate credit ☐ Professional credit ☐

1. School/Division Medicine/Public Health
2. Academic Subject Code PBHL

3. Course Number A410 (must be cleared with University Enrollment Services)
4. Instructor Thompson

5. Course Title Introduction to Environmental Toxicology

Recommended Abbreviation (Optional) Intro to Env Toxicology

(Limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year): Spring 2011

7. Credit Hours: Fixed at 3 or Variable from 0 to 0

8. Is this course to be graded S-F (only)? Yes ☑️ No ☐

9. Is variable title approval being requested? Yes ☐ No ☑️

10. Course description (not to exceed 50 words) for Bulletin publication: This course is structured for those students desiring a basic understanding of the principles and practices of toxicology and how these are applied in the environmental regulator arena. Although there are no prerequisites, students should have a reasonable background in general chemistry, organic chemistry, anatomy, physiology or other biological sciences.

11. Lecture Contact Hours: Fixed at 3 or Variable from 0 to 0

12. Non-Lecture Contact Hours: Fixed at 3 or Variable from 0 to 0

13. Estimated enrollment: 30 of which 100 percent are expected to be graduate students.

14. Frequency of scheduling: Fall/Spring/Summer Will this course be required for majors? No

15. Justification for new course: Necessary component for the development of the Bachelor of Science in Public Health (BSPH) Program.

16. Are the necessary reading materials currently available in the appropriate library? Yes

17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.

18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by: Carole Kacic Date 3/29/10

Department Chairman/Division Director

Date

Dean of Graduate School (when required)

Date

Approved by:

Date

Dean

Date

Chancellor/Vice-President

Date

University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.
COURSE

Number/Title: PBHL-A 410 INTRO TO ENV TOXICOLOGY (3 CR)
Class Number: TBA
Day and Time; Location: TBA

INSTRUCTOR

Instructor: Rod B. Thompson
Office Hours/Location: Wednesdays from 5:15-5:45 pm, BS 4032W, by appointment, after class
Teaching assistant available by appointment and after class
Telephone: Rod B. Thompson – 317-209-8139 (home) 317-691-9857 (cell)
Teaching assistant – 317-362-3724 (cell)
E-mail Address: Rod B. Thompson – rodbthompson@comcast.net
Teaching assistant – namalee@gmail.com

COURSE DESCRIPTION

This course is structured for those students desiring a basic understanding of the principles and practices of toxicology and how these are applied in the environmental regulatory arena. Although there are no prerequisites, students should have a reasonable background in general chemistry, organic chemistry, anatomy, physiology or other related biological sciences.

The course is divided into three parts: The first part of the course is a framework for environmental toxicology covering topics such as routes of exposure, biotransformation, metabolism, target organs, dose-response and chemical regulatory processes. The second part addresses specific chemicals, classes of contaminants, toxic responses and cancer. The third part covers those environmental or ecological aspects of toxicology: soil toxicology, aquatic toxicology, fate and transport, ecological risk assessment, and human health risk assessment.

REQUIRED COURSE MATERIALS

There is no required text for this course. A student guide is available that provides material covering the more difficult portions of the course. Most lectures use a PowerPoint format. Supplemental handouts will also be provided throughout the semester. Students are expected to utilize their lecture notes, copies of the PowerPoint presentations, handouts and the student guide when preparing for examinations.

RECOMMENDED READINGS

The following will be available on reserve. In general, these texts are supplementary and may help increase understanding. Guidance on their applicability will be provided by the instructor.


COURSE LEARNING OUTCOMES

Upon successful completion of this course, a student should be able to:

✓ Analyze chemical compounds for potential toxicity
✓ Demonstrate how toxicity is assessed
✓ Extend how toxicity is used to define safe levels of exposure
✓ Assess the fate and transport of chemical compounds in the environment and the human body
✓ Develop and implement "green" standards
✓ Show how regulatory standards are set using risk assessment
✓ Correlate how social and cultural differences impact environmental toxicology issues
✓ Compile different perspectives on major environmental toxicology issues and be able to soundly support a given perspective demonstrating that understanding

PRINCIPLES OF UNDERGRADUATE LEARNING (PULs)

The activities in this course are linked to the following Principles of Undergraduate Learning:

✓ Intellectual Depth, Breadth, and Adaptiveness – You will compare and contrast approaches to knowledge in different disciplines such as chemistry, anatomy, public policy, etc., to assess toxicity of chemicals in the environment and determine reasonable regulatory measures in the U.S. and abroad.

✓ Core Communication and Quantitative Skills – You will develop your ability express and interpret information by conducting individual research on current environmental topics related to toxicology and by relaying this information to others by participating in classroom discussions.

✓ Critical Thinking – You will demonstrate the ability to analyze and comprehend the numerous complex issues involved in assessing toxicity, presenting scientific findings, examining global cultural and economic factors, and determining regulatory outcomes.

POLICIES

Students are expected to attend class, be professional, and be engaged in their own learning process. Attendance will not be taken or counted against grades; however, a large portion of the exams will be based on lecture materials. If students anticipate problems with time management, understanding course materials, or anything that may impede their progress, please discuss it with the instructor as early as possible in the semester.

STUDENTS WITH DISABILITIES

Students needing accommodations because of disability will need to register with Adaptive Educational Services (AES) and complete the appropriate forms issued by AES before accommodations will be given. The AES office is located in CA 001E and you can reach the office staff by calling 274-3241.
STUDENT COURSE EVALUATION

The Department of Public Health evaluates all courses. Student course evaluations will be conducted in a manner that maintains the integrity of the process and the anonymity of respondents.

ACADEMIC INTEGRITY

Academic and personal misconduct by students in this class are defined and dealt with according to the procedures in the Student Misconduct section of the IUPUI Code of Student Rights, http://live.iupui.edu/dos/code/htm.

ASSESSMENT AND GRADING

Undergraduate grading will be based on examinations. There will be three scheduled examinations during the semester. Each examination will consist of questions taken from the class lectures, power points, the student guide and any handouts. Tests may consist of multiple-choice questions, short essay, true/false, or any combination of these. Each test will count for one-third of the final grade. Grading will be based on the following scale:

A+ = 98-100%
A  = 93-97
A-  = 90-92
B+  = 88-89
B   = 83-89
B-  = 80-82
C+  = 78-79
C   = 73-77
C-  = 70-72
D+  = 68-69
D   = 63-67
D-  = 60-62
F   = 0-59

Graduate grading will be based on the three exams discussed in “Undergraduate Grading” and the Environmental Case Study. Each of the three exams and the Case Study will count equally as one-fourth (25%) of the final grade.

COURSE SCHEDULE

Jan  Introduction, Overview, Chemistry Review
Jan  Absorption, Distribution, Metabolism, Excretion
Jan  Distribution, Excretion, Biotransformation
Feb  Tox Principles, Effects
Feb  Test, (Case Study grad students)
Feb  Carcinogenesis (Case study Grad students)
Feb  Pesticides (Case study Grad students)
Mar  Compound Classes Metals, Chlorinated Hydrocarbons, Solvents (Case study Grad students)
Mar  Human Health Risk Assessment (Case study Grad students)
Mar        Spring Break
Mar        Test (Case study Grad students)
Mar        Environmental Media (Case study Grad students)
Apr        Fate and Transport (Case study Grad students)
Apr        Environmental Standards Air/Soil/Water (Case study Grad students)
Apr        Environmental Workplace Standards (Case study Grad students)
April      Green Standards (Case study Grad students)
May        Final Exam (5:45-7:45pm)

Note: The instructor may change test dates, lecture topic dates or reading assignments during the course of the semester to facilitate the overall course content and objectives. The dates marked with "Case study Grad students" are dates available for the Grad students to present their work to the class— not all of these dates will be used for presentation.

**ASSIGNMENTS**

**Undergraduate and Graduate Students**
Throughout the course the instructor may suggest a current toxicology topic or environmental topic related to toxicology that will be the focus of a classroom discussion. The discussions are designed to last about 10-20 minutes, facilitate the learning of relevant topics and increase the students' ability to understand the technical science. The topic will be posted on oncourse or announced in class. Students may be required to research the topics individually before class or they may be assigned articles to read. Participation is at the students' discretion. A lack of participation in classroom discussion will not be used to influence a student grade.