



BIO 335 Introduction to Environmental Toxicology

Winter 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email:TBA

COURSE OBJECTIVES

This course will cover the general aspects of ecosystems and environmental toxicology of different contaminants, including an examination of the major classes of pollutants, their fate in the environment, their disposition in organisms, and their mechanisms of toxicity. The objectives of this course are to introduce the students to the nature and effects of toxic substances occurring in both natural and manmade environment.

Upon Completion of this Course, students will be able to:

1. Describe the scope of environmental toxicology study and recognize the major classes of pollutants;
2. Evaluate the ecological and biological responses of pollutants at different levels;
3. Use the skills, techniques and tools necessary for a successful career in the field of environmental toxicology;
4. Understand contemporary environmental issues and the impact of environmental toxicology in a global and societal context.

PREREQUISITES

BIO 240 Introduction to Toxicology

GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:



ITEM	POINTS
2 Assignments	10 Points
2 Quizzes	20 Points
6 Lab Reports	30 Points
Midterm Exam	15 Points
Final Exam	25 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F$.

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

Principles of Ecotoxicology. 2nd edition. Walker CH, Hopkin SP, Sibly RM, Peakall DB. Taylor & Francis Group, 2001.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
Module 1	Topics: Topic 1: Introduction to Environmental Toxicology Topic 2: Major Classes of Pollutants Topic 3: Routes by which Pollutants Enter Ecosystems Topic 4: Long-Range Movements and Global Transport of Pollutants Assessments: Lab #1 Report #1 Assignment #1



Module 2	<p>Topics: Topic 5: The Fate of Metals and Radioactive Isotopes in Contaminated Ecosystems. Topic 6: Fate within Individual Organisms Topic 7: Organic Pollutants in Terrestrial Ecosystems Topic 8: Organic Pollutants in Aquatic Ecosystems</p> <p>Assessments: Lab #2 Report #2 Quiz #1</p>
Module 3	<p>Topics: Topic 9: Determination of Toxicities of Mixtures Topic 10: Toxicity Testing with Terrestrial Organisms Topic 11: Toxicity Testing with Aquatic Organisms Topic 12: Risk Assessment</p> <p>Assessments: Lab #3 Report #3 Midterm Exam</p>
Module 4	<p>Topics: Topic 13: Protective Biochemical Responses Topic 14: Molecular Mechanisms of Toxicity Topic 15: Effects of Pollutants at Cellular Level Topic 16: Effects at Organ Level in Animals</p> <p>Assessments: Lab #4 Report #4 Assignment #2</p>
Module 5	<p>Topics: Topic 17: Effects at Organ Level in Animals Topic 18: Effects on Populations Topic 19: Effects to Communities and Ecosystems Topic 20: Landscape to Global Effects</p> <p>Assessments: Lab #5 Report #5 Quiz #2</p>



Module 6	<p>Topics: Topic 21: Biomarkers Topic 22: In Situ Biological Monitoring Topic 23: Quantitative Analysis of Effects Topic 24: Ecotoxicology: Looking to the Future</p> <p>Assessments: Lab #6 Report #6 Final Exam</p>
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ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

LEARNING REQUIREMENTS

- 1) Late assignments are not acceptable and are subjected to grade deductions.
- 2) Assignments submitted in the wrong format will be counted as not submitted.
- 3) Failure to submit or fulfill any required course component results in failure of the class.
- 4) Make-up for midterm and final exams only with valid excuses, as defined by the University.
- 5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.



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TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities DIRECTLY related to the course (eg., note taking, reading course documents).

ACADEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.