



College of Science, Engineering, and Agriculture Biological & Environmental Sciences

ENVS312 Introduction to Environmental Toxicology

I. General Information

Course syllabus fall 2016

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Book: Newman, M. C. 2010. Fundamentals of ecotoxicology. Fourth ed. CRC Press, Taylor and Francis Group.

II. Course Description

This course is designed to provide an overview of environmental toxicology, including an examination of the major classes of pollutants, their fate in the environment, their disposition in organisms, and their mechanisms of toxicity. An emphasis will also be placed on assessing the toxicity of pollutants in biological and environmental systems.

III. Student Learning Objectives

To understand the effects of toxicants in the environment.

To understand and apply basic concepts from Environmental Sciences and Environmental Toxicology.

To collaborate and work on teams.

To develop a reading tradition.

To develop communication skills and clarity to present ideas and explain them in public.

IV. Learning strategies

Lectures

Discussions and Talks

Reading assignments to be discussed in class

Analysis of Case Study Samples

Individual work, analysis of free reading

Homework

Audiovisual projections

V. Assumptions, Expectations, Philosophy

University students are a select group of students soon to be professionals.

Instructors can have high expectations of student performance.

Demanding courses benefit students more than easy courses.



College of Science, Engineering, and Agriculture Biological & Environmental Sciences

Assignments are due on time unless you have made a prior arrangement with me (only granted for unusual or extenuating circumstances and in case of health issues proper medical excuse is required).

Come to class prepared, having read and thought about the assigned readings; course materials are meant to be studied, not merely read.

Actively participate in class discussions; ask questions.

In university, a lot of your learning will occur outside of the classroom, during your own research, and in formal and informal interactions with your peers—both here and at meetings, correspondence, etc. Therefore, I expect you to take full advantage of ALL learning opportunities, including seminars and invited speakers.

Reading and assimilating information is a critical part of your current and continuing education. This will help you become a better writer, a more rounded individual, and expose you to subjects outside of your immediate knowledge.

VI. Tentative course outline

Part I. Introduction and basic principles of Environmental Toxicology

Most used terms

Impacts and occurrence of toxicants

Transport of toxicants in the environment

Bioaccumulation

Metabolism/Biotransformation

Biomagnification

weeks 1, 2, 3, and 4

Part II. Toxicodynamics

Endocrine disruptors

Carcinogens

TKTD Models

weeks 5, 6, 7, and 8

Part III. Toxicants effects

Populations' effects

Communities' effects

Landscape and Global effects

weeks 9, 10, 11, and 12

Part IV. Ecological Risk Assessment

weeks 13, 14, and 15

VII. Course Requirement and Evaluation Method

Attendance and punctuality is required and non-negotiable.

Homework, quizzes, exams, concept implementation project and term paper are required.

Activities that distract surrounding people are inconsiderate and disrespectful.

Activities such as texting, emailing, browsing or using cellular phones are prohibited.

We encourage student contribution to the overall progress of the group. We encourage interactive participation.



College of Science, Engineering, and Agriculture Biological & Environmental Sciences

It is necessary that students have a professional and ethic behavior through the entire course.

Lectures are a group activity, and so it requires social consideration and respect amongst members of the group, teachers and professors.

Grade basis:

2 tests, including final (200 points)

Case study (50 points)

5 Assignments (50 points)

5 Quizzes (50 points)

Total 350 points

Penalty enforcement (I reserve the right to adjust your grade for violation of the minimum expectations)

Make-up exams will only be given if arrangements are made with the instructor before missing the scheduled exam. A documented excuse will be required. Otherwise, missing exams will be counted as zeroes in the overall grade computation.

Grading Scale: The following scale is adhered to strictly.

90.0 - 100% = A

80.0 - 89.9% = B

70.0 - 79.9% = C

60.0 - 69.9% = D

<60.0% = F

Assignments (5)

Journal articles

Reading and assimilating information is a critical part of your current and continuing education. For each assign date, a journal is named in the right column of the table, choose and read a paper from that journal that you find interesting or relevant. These journals are available in our library (online resources). On that date, provide me a citation and a short description of the paper (10 sentences).

Date	Journal
SEPT 6	Environmental Toxicology
SEPT 20	Toxicology and Environmental Health Science
OCT 4	Bulletin of Environmental Contamination and Toxicology
NOV 8	Ecotoxicology and Environmental Safety
DEC 6	Environmental Science and Pollution Research International

Case Study

Each student will identify a case study exemplifying Environmental Toxicology principles. You will be responsible of understand and apply this scenario to other potential case studies. You also will propose alternative solutions to



College of Science, Engineering, and Agriculture Biological & Environmental Sciences

complement and improve the example you are presenting. You will develop an essay (800-1000 words) to document your case study and will give an oral presentation of 15 minutes (12 minutes presentation and 3 minutes for questions). Presentations will be the last week of class.

Format for the case study:

I. Describe the problem or case question.

II. Describe the case

Introduction

Background

Affected area, species, communities, ecosystems

Environmental policy in place (if any, or potential)

Implications

III. Conclusions

VIII. Course and University and Policies

Responsible Use of Technology — It is expected that all students will only use cellphones, PDAs, laptop computers, MP3 players and other technology outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music or using a laptop computer for matters unrelated to the course may be grounds for dismissal from class and/or other penalties. Students are not allowed to use image, video, nor audio recording devices of any kind during class time without prior consent of the instructor.

University Specific Procedures:

ADA Statement-Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services Texas A&M-Commerce

Gee Library

Room 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

StudentDisabilityServices@tamuc.edu

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment.



College of Science, Engineering, and Agriculture Biological & Environmental Sciences

Campus Concealed Carry - Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to (<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>) and/or consult your event organizer). Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.