TEXAS A&M UNIVERSITY
COMMERCE
College of Science and Engineering

BSC 562 Ecotoxicology

I. General Information

Course syllabus: Fall 2024
Credits: 3
Instructor of record: Archana Srinivas, Ph.D.
Office: Science Building (STC) 235
Webinars: Tuesday and Thursday: 2:00 PM to 3:15 PM via Zoom in D2L .
Office hours: By appointment scheduled via email
Web page: TBA
eCompanion Site: D2L Brightspace @ MyLeo
Phone: TBA
Email: Archana.Srinivas@tamuc.edu

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

Reading assignments
Analysis of scientific literature
Individual work, analysis of free reading
Written synthesis of information

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.
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.
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 schedule

Date	Topic
WEEK 1	Introduction
WEEK 2	Major classes of contaminants
WEEK 3	Uptake and biotransformation,
WEEK 4	Detoxification, elimination, and accumulation
WEEK 5	Factors affecting biotransformation
WEEK 6	Bioaccumulation from food and trophic transfer
WEEK 7	Molecular effects and biomarkers
WEEK 8	Cells, tissues, and organs
WEEK 9	Sublethal effects to individuals
WEEK 10	Acute and chronic lethal effects to individuals
WEEK 11	Effects on populations
WEEK 12	Effects on Communities and ecosystems
WEEK 13	Landscape to global effects
WEEK 13	Risk assessment of contaminants
WEEK 14	Research project and presentations
WEEK 15	Final Exam (Cummulative)

VII. Course Requirement and Evaluation Method

Assignments, quizzes, and research paper are required. I encourage student contribution to the overall progress of the group. I encourage interactive participation even though is an online class. It is necessary that students have a professional and ethical behavior through the entire course.

Homework, quizzes, exams, concept implementation project and term paper are required.
It is necessary that students have a professional and ethical behavior through the entire course.

Grade basis:
13 chapter summaries (260 points)
5 assignments (50 points)
1 research project (60)
Final exam (50 points)
Total 420 points

Penalty enforcement (I reserve the right to adjust your grade for violation of the minimum expectations).
Make-up quizzes will only be given if arrangements are made with the instructor before missing the scheduled quiz. A documented excuse will be required. Otherwise, missing quizzes will be counted as zeroes in the overall grade computation.

Grading Scale:
90.0 – 100% = A
80.0 - 89.9% = B
70.0 - 79.9% = C
60.0 – 69.9% = D
<60.0% = F

Chapter summaries (13)
For each chapter summary, you will summarize the information contained in each book chapter. Try to synthesize the information and make connection among topics within the chapter. It **should be a narrative** not an outline of the chapter. Read the chapter, take notes and then write about it. Each summary should be at least 800-1000 words. These are the chapters. On that date, provide me a summary in the assigned dropbox.

Date	Chapter summary
WEEK 1	Introduction
WEEK 1	Major classes of contaminants
WEEK 2	Uptake, biotransformation, detoxification, elimination, and
WEEK 3	accumulation
WEEK 4	Factors affecting biotransformation
WEEK 5	Bioaccumulation from food and trophic transfer
WEEK 6	Molecular effects and biomarkers
WEEK 7	Cells, tissues, and organs
WEEK 8	Sublethal effects to individuals
WEEK9	Acute and chronic lethal effects to individuals
WEEK 10	Effects on populations
WEEK 11	Effects on Communities and ecosystems
WEEK 12	Landscape to global effects
WEEK 13	Risk assessment of contaminants

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 (min. 200 words).

Date	Journal
WEEK 1-3	Environmental Toxicology

WEEK 3-5	Toxicology and Environmental Health Science
WEEK 5-7	Bulletin of Environmental Contamination and Toxicology
WEEK 7-9	Ecotoxicology and Environmental Safety
WEEK 9-12	Environmental Science and Pollution Research International

Research project and presentation:
You will develop a research project (literature review) on a specific topic in ecotoxicology. You should include an introduction, methodologies used to study your topic, results, and discussion. The research project will have at least 5,000 words including references. The project will be due the last day of class. You will present your research project in a 5-minutes video and submit it in the assigned dropbox along with the written part.

VIII. Course and University and Policies

Responsible Use of Technology:
As a web class, students have a choice to participate in class during the hours or watch the recording of the 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.

Use of AI:
The critical work of creativity and original writing relies on integrity, originality, and ethical conduct in regard to appropriate representation as an author or creator. Thus, submitting work with a significant percentage of AI-generated content, unless otherwise permitted, can be considered academic misconduct under Texas A&M University Student Rule 20. Students must therefore cite the use of Generative AI tools and document what they have contributed to an assignment.

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.

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.