

BIOL 4375/5375

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Course Description

This course is 100% asynchronous and delivered on Canvas. The goal of this course is to introduce students to toxicology at the biochemical and molecular level. This will include covering some basics in toxicology, molecular biology, and physiology. The course will include a discussion of a variety of toxic modes of action, modern techniques used in molecular toxicology, and a discussion of current toxicological research literature. Students will be evaluated based on performance on exams, quizzes, brief written assignments, and a term paper.

Textbook: Mechanistic Toxicology 2nd Ed. U Boelsterli. Informa Healthcare, USA. I recommend getting this as a reference book for the course. Earlier editions are fine if you find one at lower cost. It is also available as an e-book at the UNT library that you can look at by logging in using your EUID.

Course Objectives

Upon completion of this course, students should be able to:

1. Understand basic concepts in toxicology and the application in risk assessment.
2. Describe the mechanisms governing the uptake, transport, and metabolism of xenobiotics in the body
3. Discuss basic molecular mechanisms of toxicity including covalent binding, oxidative stress, disruption of calcium homeostasis, protein/ion channel disruption, and others.
4. Describe molecular drivers of cellular responses to xenobiotic exposure including changes in gene expression, induction of apoptosis, and necrosis.

Course Summary:

Date	Details
Fri Aug 28, 2020	Assignment Meet Your Instructor/Introduce Yourself
Fri Sep 4, 2020	Assignment Week 1 Lecture Quiz
Fri Sep 11, 2020	Assignment Week 2 Lecture Quiz
	Assignment Week 2 Brief Writing Assignment
Fri Sep 18, 2020	Assignment Week 3 Quiz
Fri Sep 25, 2020	Assignment Week 3 Brief Writing Assignment
	Assignment Week 4 Lecture Quiz
Sat Oct 3, 2020	Assignment Exam 1
Fri Oct 9, 2020	Assignment Week 6 Quiz
Fri Oct 16, 2020	Assignment Week 7 Brief Writing Assignment
	Assignment Week 7 Quiz
Fri Oct 23, 2020	Assignment Week 8 Quiz
	Assignment Week 8 Brief Writing Assignment
Fri Oct 30, 2020	Assignment Week 9 Quiz
	Assignment Term Paper Rough Draft

Date	Details
	Assignment Week 9 Brief Writing Assignment
Sat Nov 7, 2020	Assignment Exam 2
	Assignment Week 11 Quiz
Fri Nov 13, 2020	Assignment Week 11 Brief Writing Assignment
	Assignment Week 11 Brief Writing Assignment Co
Fri Nov 20, 2020	Assignment Week 12 Quiz
Fri Nov 27, 2020	Assignment Term Paper Final Draft
Thu Dec 3, 2020	Assignment Week 13/14 Quiz
Fri Dec 11, 2020	Assignment Exam 3