

## Syllabus, Spring 2025

### PHRM 5720, Toxicology, 3 credits

#### Meeting Time and Location

Monday's/Wednesday's/Friday's 9:40 – 10:30 AM, Stafford Hall 301

#### Course Faculty

- Dr. Karen C. Glass (course director), Associate Professor of Pharmacology, Firestone 362, karen.glass@med.uvm.edu
- Dr. Wolfgang Dostmann, Professor of Pharmacology, Wolfgang.Dostmann@uvm.edu
- Dr. Osama Harraz, Assistant Professor of Pharmacology, osama.harraz@uvm.edu
- Dr. George Wellman, Professor of Pharmacology, George.Wellman@uvm.edu
- Dr. Frances Carr, Professor of Pharmacology, frances.carr@uvm.edu
- Dr. Anthony Morielli, Associate Professor of Pharmacology, anthony.morielli@med.uvm.edu

#### Office Hours

By appointment

#### Prerequisites

Introductory Biology or Organic chemistry, or Instructor permission.

#### Course Description

This 3-credit course is intended to provide an understanding of the chemical, biochemical, and physiological factors that determine the pathological effects of chemicals in living systems. We will explore the principles of toxicology, focusing on molecular, environmental, and clinical aspects of toxins. Topics include metabolic pathways, toxicogenomics, environmental and plant toxins, chemical and biological warfare agents, heavy metals, and forensic toxicology.

- Last Day to Add: 01/17/2025
- Last Day to Drop: 01/27/2025

#### Format

All lectures will be in-person. Lecture materials (PowerPoint files, handouts, etc.) will be made available through Brightspace.

#### Recommended Textbook

Casarett and Doull's Toxicology: The Basic Science of Poisons – (9th Edition; 2019). This text is the world's leading and most authoritative textbook on poisons and has been hailed as the most trusted all-in-one overview of the biomedical and environmental aspects of toxicology. However, the book is **not required** for the course.

Another resource is: Basic and Clinical Pharmacology, 16e by Todd W. Vanderah. Online access to this textbook is available through the Dana Health Sciences Library. Go to 'Research Databases' and find the link for AccessMedicine. Then search for the book title. <https://accessmedicine.mhmedical.com/book.aspx?bookid=3382>

#### Readings

From to time readings may be distributed to students.

## Required Platforms and Software

Brightspace, <https://brightspace.uvm.edu/>

iClickers, <https://www.uvm.edu/it/kb/article/iclicker-cloud/>

Join code: VZUY

- We are using Brightspace as the UVM LIMS. For Brightspace information students can access the following UVM Knowledge Base article:

<https://www.uvm.edu/it/kb/article/brightspace-for-students/>

## Discussion board

Students are encouraged to post and respond to 'muddiest point' questions on **concepts** that were unclear from the lecture sessions to the Brightspace discussion boards for each exam. Students have the ability to make anonymous posts.

## Exam Format (75% of grade)

A total of **4 exams** are scheduled in roughly equal intervals throughout the course. The exams will be held in person using paper copies. Each exam is worth **25%** of the students of the total score. Most questions will be multiple choice. Some questions may require short essay responses. **The exams are not cumulative.**

- **The LOSWEST exam grad will automatically be dropped**

## PowerPoint presentation (20% of grade, Due March 28<sup>th</sup>):

Students taking the course should submit a PowerPoint presentation recording on a toxin approved by the course director. Ideally this will be a toxin not covered in the course, unless it provides a new angle or more in depth information on a toxin mentioned briefly in the class.

The presentation must be on a drug approved by me (submit your choice by email).

- PowerPoint: 10-15 slides, 10 min presentation recorded through Zoom, PowerPoint, or other platforms.
- If possible, the presentation should include a historical background, discovery, toxicological and/or biological effects, mechanisms of action, and an outlook/perspective section.
- Figures will improve the quality of the presentation, and please remember to cite where you found the figure unless you created it yourself.
- References should be properly cited and included at the end.
- This presentation will be submitted via Brightspace assignments as a PowerPoint recording with slides/audio or as an .mp3 file).
- Student presentations will be posted in Brightspace and will be required viewing for all other students online.
- The student presentation will be graded 1-10 points on the thoroughness and quality of their presentation, as well as discussion board questions posted.

## Discussion of Presentations (5% of grade, Due by April 28<sup>th</sup>)

- The presenting student is expected to create 1-2 discussion-based questions from the materials (by April 28<sup>th</sup>) and lead an online discussion on the topic.
- All students in the class will be graded (pass/fail) on their participation in the discussion board, either by answering or asking questions about specific student presentations.

## Religious Holidays

Students have the right to practice the religion of their choice. Each semester, students should submit in writing to the instructor(s), as early as possible and at least one week

before their documented religious holiday, the date(s) of the conflict or absence. The faculty will work with any students who miss work or exams for religious observance to make up this work.