

## LIFS4380: Pharmacology and Toxicology

### Course description:

Fundamental concepts of drug action and toxicity; clinically useful agents in central and peripheral disorders; toxicology of drugs and agents that are hazardous to living organisms.

*Prerequisite:* LIFS 3040 or LIFS 3060

*Number of credits:* 3

*Course format:* Two 80-minute sessions of lecture/tutorial per week

*Lecture time & venue:* Mondays & Wednesdays, 12:00 – 1:20 pm, Zoom / Venue to be confirmed

### Intended Learning outcomes (ILOs):

Upon completion of this course, students are expected to be able to:

1. Explain the fundamental concepts of pharmacokinetics and pharmacodynamics, therapeutic effects and toxicities of drugs acting on the cardiovascular, renal, endocrine and nervous systems, medical agents with chemotherapeutic and anti-inflammatory functions, and toxic chemicals in the environment.
2. Apply existing bioscience knowledge to pharmacological applications.
3. Examine the correlations between pharmacology and other bioscience topics such as physiology, cell biology, microbiology, neurochemistry and the molecular basis of diseases.
4. Identify some of the complex issues facing biosciences professionals.

### Learning Resources

*Textbook:* Pharmacology and Toxicology at a Glance, 1<sup>st</sup> ed., by Y.H. Wong & A.S.L. Chan (2013) McGraw Hill

*Additional reading material:* The Pharmacological Basis of Therapeutics (Goodman & Gilman) MacMillan Publishing Co. RM300.G644.2006

### Assessment Tasks (Weightings):

- Assignment (30%): ILO1,2,3
- Final Exam (70%): ILO1,2,3,4

The mid-term and final exams require students to describe and/or explain scientific terms, observations, phenomena, experimental data, etc. relevant to the broad topics stated in ILOs 1 to 3, which include the more specific topics stated in the course schedule.

Instructor	Office	Extension	Email Address
Prof. Yung Hou WONG	Room 5461	x7328	boyung@ust.hk

### Teaching and Learning Activities

Scheduled activities: two 80 min lecture/tutorial per week

- Lectures: focus on the delivery of knowledge and information in the specified topics
- Tutorials: focus on evaluation of students' understanding and integration of knowledge
- Assignment: each student will prepare a monograph on a selected drug to illustrate the principles of pharmacology

## Course Schedule

<b>Date</b>	<b>Topic</b>	<b>Instructor</b>
Feb 1	Chapter 1: Introduction	Wong
Feb 3, 8	Chapter 2: Pharmacokinetics	Wong
Feb 10	Chapter 3: Pharmacodynamics	Wong
Feb 17	Tutorial 1	Wong
Feb 22, 24	Chapter 4: Autonomic Nervous System	Wong
Mar 1, 3	Chapter 5: General and Local Anaesthetics	Wong
Mar 8	Tutorial 2	Wong
Mar 10	Chapter 6: Hypnotics, Sedatives and Anti-depressants	Wong
Mar 15	<i>Course Assignment</i>	Wong
Mar 17, 22	Chapter 7: Antihypertensive and Antiarrhythmic Drugs	Wong
Mar 24, 29	Chapter 8: Diuretics and Anticoagulants	Wong
Apr 7	Tutorial 3	Wong
Apr 12, 14	Chapter 9: Anticancer and Immunosuppressive Agents	Wong
Apr 19, 21	Chapter 10: Antiparasitic and Antimicrobial Agents	Wong
Apr 26	Tutorial 4	Wong
Apr 28	Chapter 11: Local Hormones and Anti-inflammatory Drugs	Wong
May 3	Chapter 12: Toxic Chemicals	Wong
May 5	Chapter 13: Pesticides	Wong