

**Division of Life Science**  
**The Hong Kong University of Science & Technology**  
**LIFS 4760**  
**Biochemistry of Diseases**  
**2023 Fall Semester**

**Instructor:** Prof Robert Ko ([bcrko@ust.hk](mailto:bcrko@ust.hk); Rm 5534)

**Time:** MON (3:00 to 4:50 pm); FRI (10:00 – 11:50 am)

**Venue:** G010

### **Course Description**

This course covers the clinical manifestation and pathophysiology of common human diseases, with an emphasis on the biochemical basis underlying the development of the diseases and their treatments with drugs.

Prerequisite: LIFS1902/2040/2210. Credit Points: 3.

### **Intended Learning Outcomes**

At the end of this course, students should be able to:

- Acquire basic knowledge in the clinical manifestations, pathophysiology, and biochemical basis for the treatment of common human diseases;
- Understand the biochemical mechanism underlying common human diseases and treatments;
- Apply biochemistry knowledge and skills to interpret the pathogenesis of common diseases and evaluate the pros and cons of current treatments.

### **Course Assessment**

The course will be assessed by two methods. First, two examinations (weighing 38 and 42%, respectively) in the format of multiple-choice questions. Second, an essay (20%) of 1000 words on the pathological cause(s) of a disease and its treatment.

### **Topics covered in the lectures**

Sep 1	A Brief History of Human Diseases and Western Medicine (1)
Sep 4,8	Diabetes Mellitus (2)
Sep 11, 15,18	Free Radicals and Human Diseases (3)
Sep 22,25	Dyslipoproteinemia and atherosclerosis (2)
Sep 29, Oct 6, 9	Ischemic Heart Disease – Angina & Myocardial Infarction (3)
Oct 13, 16	Congestive Heart Failure (2)

### **Oct 20 Exam I (1)**

Oct 27, 30	Hypertension (2)
Nov 3, 6	Peptic Ulcer Disease (2)
Nov 10,13,17	Infectious Diseases – Anti-microbial Agents (2.5)
Nov 20,24	Cancer – Chemotherapy (2.5)
Nov 27	Human Aging (1)

(24 Lectures)

### **Exam II (TBA)**

### **Supplementary Reading Materials**

Reading materials for each topic are available in the course CANVAS  
<http://canvas.ust.hk>

### **Reference**

Harrison's Principles of Internal Medicine

*By J. Larry Jameson, Anthony S. Fauci, Dennis L. Kasper, Stephen L. Hauser,  
Dan L. Longo, Joseph Loscalzo*

HKUST library has this book, which will be put on a 2-hour reserve.

Course outline and lecture PowerPoint file will be uploaded at <http://canvas.ust.hk>