

Division of Life Science
The Hong Kong University of Science & Technology
LIFS2210
Biochemistry I
(2016/17 Fall Semester)

Date/Time: 4:30 – 5:50 pm, Wednesday and Friday

Venue: Lecture Theater D

Instructor: Prof. Robert Z. Qi (Tel: 2358 7273; E-mail: qirz@ust.hk)

Course description:

Biochemistry I is a core course designed for undergraduate students majored in life science programs. Biochemistry is the study of the chemical properties and biological functions of the atoms, molecules, macromolecules, and macromolecular complexes that constitute life. Key topics include the building blocks of biomolecules including carbohydrates, membranes, nucleic acids and proteins. Students will learn the structure, function and biosynthesis of DNA, RNA and protein. Students are advised to read ahead before class to familiarize with the large amount of material that will be covered in the lectures.

Course objectives:

On completion of this course, students will be able to:

1. Explain the basic concepts of biochemistry.
2. Recall and design experiments demonstrating the principles of biochemistry.
3. Evaluate the influence of biochemical principles on social and daily life.
4. Appraise the relevance of the biological sciences in preparing for advanced study in biochemistry and related subjects.

Course schedule:

Date	Lecture
02/09	Introduction of Biochemistry I
07/09	Amino Acids
09/09	Protein Structure (I)
14/09	Protein Structure (II)
21/09	Protein Function and Evolution
23/09	Protein Technology
28/09	Enzymes & Enzymatic Reactions

30/09	Enzyme Kinetics (I)
05/10	Enzyme Kinetics (II)
07/10	Enzyme Regulation
12/10	1) Enzyme Cofactors & Coenzymes 2) Review & Tutorial
14/10	Mid-term Examination
19/10	Lipids
21/10	Biomembranes
26/10	Carbohydrates (I)
28/10	Carbohydrates (II)
02/11	Nucleic Acids
04/11	Chromatin Structure
09/11	DNA Replication
11/11	DNA Repair and Recombination
16/11	Transcription and RNA Processing
23/11	Protein Synthesis
25/11	Genetic Engineering
30/11	Course Review & Tutorial
TBA	Final Examination

Textbook: Biochemistry (4th edition)
By C.K. Mathews, K.E. van Holde, D.R. Appling, and S.R. Anthony-Cahill
The Benjamin/Cummings Publishing Company

Reference books: Biochemistry (7th edition)
By Jeremy M. Berg, John L. Tymoczko, and Lubert Stryer

Lehninger Principles of Biochemistry (6th edition)
By David L. Nelson and Michael M. Cox

Exams and Grading: Mid-term examination (50%) and Final Examination (50%)

Course website: CELT (<https://canvas.ust.hk>) for lecture slides and course materials.