

Division of Life Science
The Hong Kong University of Science & Technology
LIFS2210-L2
Biochemistry I
(2023/24 Fall Semester)

Date/Time: 4:30 pm – 5:50 pm **Monday**; 12:00 pm – 1:20 pm **Friday**

Venue: Lecture Theater A

Instructors: Prof. Lan Wang (E-mail: lanwang@ust.hk)

Course description:

Credit Points: 3

Prerequisite(s): LIFS 1901 or LIFS 1902

Exclusion: Nil

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 small molecules, macromolecules, and macromolecular complexes that constitute life. Key topics include the structures, functions, biosynthesis and regulation of biomolecules including carbohydrates, lipids, nucleic acids, amino acids and proteins. Students will also learn DNA replication, transcription and translation. Students are advised to read the textbook and lecture slides before class to familiarize with the materials 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.

Exams and Grading: Mid-term examination (50%), and Final Examination (50%); quizzes may also be given, and the scores will be combined with the mid-term and/or final exams.

Grading: A⁺ to F

Tentative course schedule:

Day of the week	Date	Lecture
F	01/09	Introduction of Biochemistry
M	04/09	Lipids
F	08/09	Biomembranes
M	11/09	Carbohydrates I
F	15/09	Carbohydrates II
M	18/09	Nucleic Acids
F	22/09	Chromatin Organization
M	25/09	DNA Replication
F	29/09	DNA Repair and Recombination
M	02/10	<i>No class. Public holiday</i>
F	06/10	Transcription and RNA Processing
M	09/10	Protein Synthesis
F	13/10	Genetic Engineering
M	16/10	Tutorial/Course Review
F	20/10	Midterm exam (date and time TBA)
M	23/10	<i>No class. Public holiday</i>
F	27/10	Amino Acids
M	30/10	Protein Structure I
F	03/11	Protein Structure II
M	06/11	Protein Function and Evolution
F	10/11	Protein Technology
M	13/11	Enzymes & Enzymatic Reactions
F	17/11	Enzyme Kinetics I
M	20/11	Enzyme Kinetics II
F	24/11	Enzyme Regulation
M	27/11	Enzyme Cofactors & Coenzymes
	TBA	Final Examination

Textbook: Lehninger Principles of Biochemistry (7th edition)
David L. Nelson, Michael M. Fox

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