

**Division of Life Science**  
**The Hong Kong University of Science and Technology**

LIFS 2820 Biochemistry Laboratory Techniques  
Fall semester, 2022-2023  
Instructor: Dr. Philip Lam  
Email: ylam@ust.hk

Venue: LTB  
Date & Time: Thursday (12:00 – 12:50)

**Course goals**

To explain the theories and concepts behind the chosen experimental sessions designed for LIFS 2720.

**Learning Outcomes**

By the end of this course, you will be able to:

1. *Realize* what biochemistry is all about.
2. *Understand* how biochemical knowledge can be derived from experiments.
3. *Acknowledge* the background aims and principles of designated experiments arranged for the related practical course of LIFS 2720
4. *Expose* to basic mechanistic functions of common biochemical equipment.
5. *Recognize* the potential application(s) of various common biochemical equipment.

**Course description**

The course is designed to enable students to acquire a strong basis of biochemical principles established in the field of biochemistry. It is designed to introduce first-year students to the underlying principles of essential biochemical techniques that have remained indispensable in experimental biochemistry.

**Teaching approach**

This course is primarily delivered through lectures.

**Assessment scheme**

Performance is assessed at the end of the semester by examination that contributes 100% to the course assessment. Exam format to be confirmed.

## Class outline and schedule

Date	Lectures
22 Sep 2022	INTRODUCTION TO LIFS 2820 BRIEFING
29 Sep 2022	BUFFERS, TITRATIONS AND PH MEASUREMENT
06 Oct 2022	CHROMATOGRAPHY I AMINO ACID SEPARATION AND IDENTIFICATION
13 Oct 2022	CHROMATOGRAPHY II GEL FILTRATION COLUMN CHROMATOGRAPHY
20 Oct 2022	ELECTROPHORESIS PROTEIN GEL ELECTROPHORESIS
27 Oct 2022	SPECTROPHOTOMETRY ENZYME KINETICS: LACTATE DEHYDROGENASE
03 Nov 2022	ORGANELLE ISOLATION BY CENTRIFUGATION AND MARKER ENZYME ASSAY
10 Nov 2022	METABOLIC SYNDROME (PART 1) GLUCOSE
17 Nov 2022	METABOLIC SYNDROME (PART 2) LIPID

### Reference books

No standard textbook is required.