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

LIFS 2820 Biochemistry Laboratory Techniques
Fall semester, 2023-2024
Instructor: Dr. Philip Lam
Email: ylam@ust.hk

Venue: TBC
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 an examination that contributes 100% to the course assessment. Exam format to be confirmed.

Class outline and schedule

Date	Lectures
21 Sep 2023	INTRODUCTION TO LIFS 2820 BRIEFING
28 Sep 2023	BUFFERS, TITRATIONS AND PH MEASUREMENT
05 Oct 2023	CHROMATOGRAPHY I AMINO ACID SEPARATION AND IDENTIFICATION
12 Oct 2023	CHROMATOGRAPHY II GEL FILTRATION COLUMN CHROMATOGRAPHY
19 Oct 2023	ELECTROPHORESIS PROTEIN GEL ELECTROPHORESIS
26 Oct 2023	SPECTROPHOTOMETRY ENZYME KINETICS: LACTATE DEHYDROGENASE
02 Nov 2023	ORGANELLE ISOLATION BY CENTRIFUGATION AND MARKER ENZYME ASSAY
09 Nov 2023	METABOLIC SYNDROME (PART 1) GLUCOSE
16 Nov 2023	METABOLIC SYNDROME (PART 2) LIPID

Reference books
No standard textbook is required.