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

<table>
<thead>
<tr>
<th>Date</th>
<th>Lectures</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 Sep 2023</td>
<td>INTRODUCTION TO LIFS 2820 BRIEFING</td>
</tr>
<tr>
<td>28 Sep 2023</td>
<td>BUFFERS, TITRATIONS AND PH MEASUREMENT</td>
</tr>
<tr>
<td>05 Oct 2023</td>
<td>CHROMATOGRAPHY I</td>
</tr>
<tr>
<td></td>
<td>AMINO ACID SEPARATION AND IDENTIFICATION</td>
</tr>
<tr>
<td>12 Oct 2023</td>
<td>CHROMATOGRAPHY II</td>
</tr>
<tr>
<td></td>
<td>GEL FILTRATION COLUMN CHROMATOGRAPHY</td>
</tr>
<tr>
<td>19 Oct 2023</td>
<td>ELECTROPHORESIS</td>
</tr>
<tr>
<td></td>
<td>PROTEIN GEL ELECTROPHORESIS</td>
</tr>
<tr>
<td>26 Oct 2023</td>
<td>SPECTROPHOTOMETRY</td>
</tr>
<tr>
<td></td>
<td>ENZYME KINETICS: LACTATE DEHYDROGENASE</td>
</tr>
<tr>
<td>02 Nov 2023</td>
<td>ORGANELLE ISOLATION BY CENTRIFUGATION AND MARKER ENZYME ASSAY</td>
</tr>
<tr>
<td>09 Nov 2023</td>
<td>METABOLIC SYNDROME (PART 1) GLUCOSE</td>
</tr>
<tr>
<td>16 Nov 2023</td>
<td>METABOLIC SYNDROME (PART 2) LIPID</td>
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## Reference books
No standard textbook is required.