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

LIFS 2820  Biochemistry laboratory Techniques  
Spring semester, 2017-2018  
Instructor: Prof Robert Ko  
Email: bcrko@ust.hk

Venue: Room 2306  
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 equipments.  
5. **Recognize** the potential application(s) of various common biochemical equipments.

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 for first-year students to the underlying principles of essential biochemical techniques that have remained indispensible 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 with MCQ and that contributes 100% to the course assessment.
Class outline and schedule

<table>
<thead>
<tr>
<th>Week/ Date</th>
<th>Lectures</th>
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| 6 Sep 2018 | INTRODUCTION TO LIFS 2820  
BRIEFING |
| 13 Sep 2018| BUFFERS, TITRATIONS AND pH MEASUREMENT |
| 20 Sep 2018| CHROMATOGRAPHY I  
AMINO ACID SEPARATION AND IDENTIFICATION |
| 27 Sep 2018| CHROMATOGRAPHY II  
GEL FILTRATION COLUMN CHROMATOGRAPHY |
| 4 Oct 2018 | CHROMATOGRAPHY III  
SERUM ELECTROPHORESIS USING CELLULOSE ACETATE |
| 11 Oct 2018| SPECTROPHOTOMETRY  
ENZYME KINETICS: LACTATE DEHYDROGENASE |
| 18 Oct 2018| ORGANELLE ISOLATION BY CENTRIFUGATION AND MARKER ENZYME ASSAY |
| 25 Oct 2018| DNA MELTING CURVE |
| 1 Nov 2018 | METABOLIC SYNDROME (PART 1)  
GLUCOSE |
| 8 Nov 2018 | METABOLIC SYNDROME (PART 2)  
LIPID |

Reference books

No standard textbook required.