

School of Life Science
Department Announcement

Summer Session

Course Registration 2024-25

LSCI3012 Practical Bioinformatics for Life Sciences

This course will provide students with hands-on training on bioinformatics analysis in a project-based manner. Students will be assigned to groups and each group will work on one project that involves learning high-throughput sequencing, namely Oxford nanopore-related experimental skills, and addressing biological questions using bioinformatics tools.

- Prerequisites:
 1. Biology laboratory courses 3000 level or above (e.g. CMBI3010 & 3020, MBTE4033 & 4034, BCHE3650 & 3730); AND
 2. (Preferred) Basic knowledge of operating Linux systems (taken programming courses, e.g. CSCI 1020/1030/1040, ESTR1100/1102)
- Apart from the abovementioned requirements, you are also required to obtain consent from Prof TF Chan to enroll to the course. Please approach Prof Chan via email (tf.chan@cuhk.edu.hk) or by phone (39436876).

[NEW] LSCI3030 Structural Biology

This course provides a detailed overview of two principles structural biology methods used for the study of the structure-function relationship biomolecules: cryo-electron microscopy (cryo-EM) and X-ray crystallography, which are indispensable and irreplaceable tools in research to reveal unprecedented architectural details of macromolecular assemblies that are invaluable to our mechanistic understanding of the biological world as well as drug discovery. This course will cover the fundamental principles and concepts with an emphasis on practical aspects of these two fundamental techniques. Basic techniques, such as specimen preparation, machine operation, data acquisition, computational image analysis and structure solving, 3D map interpretation, and model building will be covered.

LSCI3333 Introductory Live-Cell Imaging: Applications and Analyses (LEC+LAB)

In this course, students will have precious opportunities to obtain hands-on experience with some of the most advanced high speed/super-resolution microscopes in the field, such as spinning disc, two-photon and STED laser confocal microscopes. Data processing/analysis using advanced image software, such as IMARIS, will also be covered. Upon completion of the course, students will be able to incorporate these powerful microscopy and image processing/analysis techniques into their future research to study cellular dynamics.