SC/Biol3140 4.0

Advanced Biochemistry and Molecular Genetics Laboratory

2013 Fall

Research techniques used in biochemistry and molecular biology including recombinant DNA technology will be presented. Laboratory practices include protein analysis, isolation and mapping of bacterial plasmids, formation and analysis of recombinant DNA molecules, polymerase chain reaction, nucleic acid hybridization. Six laboratory hours per week, plus one lecture hour as indicated below.

Prerequisite/Corequisite:

SC/BIOL 3110. 3.0. SC/BIOL 3130 3.0 strongly recommended as a prerequisite or corequisite.

Course Director:

Gary Sweeney, Ph.D.
Associate Professor
Dept. of Biology, Faculty of Science,
York University
Phone: ext. 66635

gsweeney@yorku.ca

Teaching Assistants:

Keith Dadson - kdadson@yorku.ca

Christina Pagiatakis - cpg@yorku.ca

Technician:

George Bikopoulos - bikopoul@yorku.ca
PDF versions of laboratory manuals and relevant related information will also be made available via moodle.

Biotechnology: DNA to Protein by, Thiel, Bissen, Lyons. This will be a useful laboratory resource. Available at the bookstore.

Scheduling:

Lab: Thursday 2:30 to 5:30 pm in FS 217
Lab: Friday 2:30 to 5:30 pm in FS 217
Lecture: Friday 1:30 to 2:30 pm in CB 120

Assignment and Grading:

Lab reports:

5%  - Lab 1 (pipetting, maltose standard curve, agarose gel electrophoresis)
10% - Lab 2 (protein analysis)
15% - Lab 3 (PCR cloning and genomic cloning)
15% - Lab 4 (enzyme assay, Southern blot, dot blot)
20% - Quizzes (four of these in class)
15% - Assignments
5% - Lab book and lab performance
15% - Oral presentation

You are required to bring safety glasses and laboratory coats for the lab sessions.

No open toe shoes
Please prepare a hardcover laboratory book— it will be handed in for marking at the end of the course.

It is very important that you come prepared to each class. To that end, we expect that you will have a flow sheet for each lab prepared before the lab starts. The flow-sheets are to be included in your lab book and will be part of the marking scheme for the lab books. The flow sheets will be checked by your TA at the beginning of the lab. The lab book should contain the purpose of this lab, original data and observation, graphs, pictures and a brief summary. At the end of the course, the lab book will be handed in and marked for its completeness.