

BIOTECHNOLOGY
SC/BIOL 4290 4.0, Section A
FALL 2014

PREREQUISITE: SC/BIOL 3110 3.0 or SC/BCHM 3110 3.0

COURSE DIRECTOR: Dr. Katalin Hudak
A304 Farquharson Bldg.
hudak@yorku.ca
Phone: 736-2100 x33470

LECTURES: Monday and Wednesday, 10:30am – 11:30am, Ross Building 501S
Powerpoint slides will be posted on Moodle prior to lecture

TEXT: None

OFFICE HOURS: Please e-mail hudak@yorku.ca to make an appointment.

MISSED TESTS: Absence from a lab or the lab quiz must be accompanied by a completed Attending Physician's Statement clearly stating why the lab/quiz was missed. The grade value of the quiz will be added to the final exam. Missed final exams must be accompanied with a completed Attending Physician's Statement and a Final Exam Deferred Standing Agreement.

GRADING FOR TERM

PRESENTATION (20%)

You will be expected to give an oral presentation on a subject that is related to this biotechnology course. Based on your choice of a single recently published paper (choice must be approved by course director), give a 15 minute presentation on the paper, followed by 10 minutes for questions. Start with an introduction to the topic and then discuss the research article (what was done, what were the results obtained, what conclusions were drawn, were the conclusions justified?).

PARTICIPATION (10%)

This grade will be based on your participation in both the laboratory exercises and the presentations. This means you have to ask questions in both environments!

Your participation in the oral presentations; i.e., your attendance and your participation in the discussions will be assessed by the course director.

The lab performance grade is based on your laboratory technique, how well prepared you are for the lab, your lab cleanup, your attitude in the lab, your cooperation with your lab partner and on your laboratory notebook (which will be reviewed periodically by the teaching assistants). The grade for lab performance is determined by all of those involved in running the lab: the course director, the teaching assistants and the lab technician.

LAB REPORTS (35%)

Laboratory 1, Yeast 2-Hybrid System 10%

Laboratory 3, Immunoprecipitation of Activated MAP Kinase 10%

Laboratory 4, Protein Expression and Purification, In Vitro Transcription and Translation 15%

LAB QUIZ (10%)

Laboratory 2, Bimolecular Fluorescence Complementation and Immunocytochemistry 10%

FINAL EXAM (25%)

This exam will be based on the lecture material and fellow student presentations, and will be held during the normal exam period.

LECTURE TOPICS:

Agricultural Biotechnology (GM foods, extricating foreign genes)

Industrial and Environmental Biotechnology (Biocatalysis, novel compounds, bioremediation)

Medical Biotechnology (Cloning, stem cells, gene therapy)

LEARNING OBJECTIVES

Knowledge and understanding of biotechnology topics and applications

Critical evaluation of primary literature

The ability to carry out challenging lab experiments; to collect and analyse data, to trouble-shoot, to write full-length lab reports

To work in pairs in the lab

To verbally present primary literature and field questions from the class

IMPORTANT COURSE INFORMATION:

University policy, procedures and regulations on Academic Honesty/ Integrity,

Access/Disability, Student Conduct, Religious Observance Accommodation, etc. are available on the Committee on Curriculum and Academic Standards (CCAS) website (see policies,

procedures and regulations) http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm