

Department of Biology Course Outline

SC/BIOL 4141 3.00 Current Topics and Methods in Cell Biology Fall 2015

Course Description

Selected topics in cell biology, such as membrane dynamics, cell cycle control, apoptosis, signal transduction and cellular rhythmicity. Presentation and critical discussion of recent research papers, emphasizing current methods and experimental design. Three lecture hours. One term. Three credits.

Prerequisites

SC/BIOL 3130 3.00. Course credit exclusion: SC/BIOL 4140 3.00 from Fall/Winter 2002-2003 only. Students without pre-requisite must request permission from the instructor. Permission will only be granted if the student has adequate background knowledge.

Course Instructors and Contact Information

Dr. Patricia Lakin-Thomas (Dr. Pat)
005 Farquharson, x33461
Office hours: Tues & Thurs 11:30 – 1:00 or by appointment
E-mail: clocklab@yorku.ca I will try to respond within one working day, or answer your question at the next class meeting if appropriate.

Schedule

Tues & Thurs 10:00-11:30, Calumet College 106

Evaluation

Presentation 30%, one midterm 30%, final exam 40%

OR

Presentation 30%, quizzes 20%, midterm 20%, final exam 30%

(Grading scheme to be determined by class vote in the first week of class)

Presentation topics and dates will be signed up on the first day of class, first come/first served, or assigned at random by the instructor. If there are more presentation dates than students, there will be an opportunity for students to volunteer to give a second presentation and use the better grade.

NOTE: Final course grades may be adjusted to conform to Program or Faculty grade distribution profiles.

Important Dates

First and Last Class Meetings: Sept 10 – Dec 3

Co-Curricular Days: Oct 29 – Nov 1 (no class)

Midterm date: Oct. 15, in class

Drop Date: Nov. 9

NOTE: for additional important dates such as holidays, refer to the “Important Dates” section of the Registrar’s Website at <http://www.yorku.ca/yorkweb/cs.htm>

Resources

Website: Moodle

Required text:

Gillen, C.M. (2007) *Reading Primary Literature*, Pearson Benjamin Cummings.

This short pamphlet is an excellent introduction to critical reading and experimental design (and how science works). Copies are for sale in the bookstore and also on reserve at Steacie.

Learning Outcomes

On completing this course, students should be able to:

1. describe recent developments in a selected set of topics at the frontiers of cell biology research.
2. suggest appropriate methods for answering questions about cells and evaluate the pros and cons of current methodologies for investigating cell structure and function.
3. suggest and evaluate experimental designs in cell biology research.
4. critically read original research papers in cell biology.
5. deliver a presentation of recent research at a professional level.

Course Content

Five current topics will be covered. Each will be introduced by a recent review followed by several original papers relevant to the topic. Students will give presentations summarizing the papers and the course director will lead critical discussions on aspects of the papers. See detailed course outline.

Experiential Education and E-Learning

EE: Students will practice professional presentation skills.

E-learning: The Moodle website will be used for posting presentations and course information.

Other Information

Exam format: Short answers and a choice of paragraph-length essay answers. The exams are open-book and open-note: You may bring the papers and your notes to the exam. You may not use computers during the exam. It is therefore essential for you to have printed copies of the papers.

Sample exam questions:

1. What is the experimental evidence to support a particular conclusion?
2. Given a particular experimental approach, suggest some controls that should be included in the experimental design and explain why they are useful.
3. What techniques would be appropriate to investigate a particular question, and what information would these techniques provide?
4. For a particular figure from a paper, explain the experimental design and explain what information was gained from the results.
5. From a particular review, what did the authors suggest are the most important unanswered questions on this topic?

Course Policies

Late policy

Presentations will not be accepted after the assigned date unless you have a well-documented excuse, in which case the presentation will be given at the first opportunity. If the midterm is missed due to a documented excuse, the weight will be assigned to the final exam.

University Policies

Academic Honesty and Integrity

York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (<http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/>). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards.

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students' research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - <http://www.yorku.ca/academicintegrity/>

Access/Disability

York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University.

Students in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs.

Additional information is available at the following websites:

Counselling & Disability Services - <http://cds.info.yorku.ca/>

Counselling & Disability Services at Glendon - <http://www.glendon.yorku.ca/counselling/personal.html>

York Accessibility Hub - <http://accessibilityhub.info.yorku.ca/>

Ethics Review Process

York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants*. In particular, students proposing to undertake research involving human participants (e.g., interviewing the director of a company or government agency, having students complete a questionnaire, etc.) are required to submit an *Application for Ethical Approval of Research Involving Human Participants* at least one month before you plan to begin the research. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately.

Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at

http://www.registrar.yorku.ca/pdf/exam_accommodation.pdf (PDF)

Student Conduct in Academic Situations

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at - <http://secretariat-policies.info.yorku.ca/policies/disruptive-and-or-harassing-behaviour-in-academic-situations-senate-policy/>