

**FACULTY OF SCIENCE**  
**Department of Biology**  
**Course Outline**

**Biology 4141 – Current Topics and Methods in Cell Biology**  
**Fall 2014**

**GENERAL INFORMATION**

**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.  
Students without pre-requisite must request permission from the instructor. Permission will only be granted if the student has adequate background knowledge.

**COURSE DIRECTOR:** Dr. Patricia Lakin-Thomas (Dr. Pat)

**SCHEDULE:** Tues & Thurs 10:00-11:30, Calumet College 108

**EVALUATION:** Presentation 30%, one midterm 30%, final exam 40%  
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 9 – Dec 4  
Co-Curricular Days: Oct 29 – 31 (no class)  
Midterm date: Oct. 14, in class  
Drop Date: Nov. 7  
Study Day (no class): Dec 2

**INSTRUCTOR CONTACT INFORMATION**

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.

## 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 AND STRUCTURE

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.

## 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**

1. Students who miss the final exam and would like an opportunity to write it must request and obtain deferred standing. A Deferred Standing Agreement form must be completed and submitted with appropriate supporting documentation (such as an Attending Physician's Statement for illness) to the professor or Biology Undergraduate Office. Senate Policy requires that "Normal requests for deferred standing must be communicated within one week following a missed examination, or on the last day to submit course work". The policy and forms for obtaining deferred standing may be found at <http://www.registrar.yorku.ca/exams/deferred/index.htm>
2. All students are expected to familiarize themselves with the following information, available on the Senate Committee on Academic Standards, Curriculum & Pedagogy webpage: <http://www.yorku.ca/secretariat/senate/committees/ascp/documents/CourseInformationForStudentsAugust2012.pdf>
  - Senate Policy on Academic Honesty and the Academic Integrity Website
  - Course accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
  - Student Conduct Standards
  - Religious Observance Accommodation