

## Department of Biology Course Outline

### SC/BIOL 2021 3.00 Cell Biology Winter 2015/2016

#### Course Description

A study of cell biology and aspects of related biochemistry. Topics include membranes, the endomembrane system, the cytoskeleton, cellular motility, the extracellular matrix, intercellular communication and intracellular regulation. Three lecture hours.

#### Prerequisites

One of the following: (1) SC/BIOL 2020 4.00, (2) SC/BCHM 2020 4.00, (3) SC/BIOL 2020 3.00, (4) SC/BCHM 2020 3.00, (5) SC/BIOL 1010 6.00 and SC/CHEM 2050 4.00, (6) SC/BIOL 1000 3.00 and SC/BIOL 1001 3.00 and SC/CHEM 2050 4.00. Course credit exclusions: SC/BIOL 2021 4.00, SC/BCHM 2021 4.00.

**WARNING:** Students without pre-requisites will be de-enrolled unless they have advanced standing or permission of the instructor.

#### Course Instructors and Contact Information

Dr. Patricia Lakin-Thomas, room 005 Farquharson, x33461 ("Dr. Pat")

Office hours: Tues & Thurs 11:30 – 1:00, other times by arrangement

**e-mail:** clocklab@yorku.ca

e-mail policy: I will try to respond within one working day, or answer your question at the next class meeting if appropriate. Questions and answers of interest to the entire class will be posted on Moodle. Please check your @yorku.ca email for important announcements.

#### Schedule

**Lectures:** T, Th 10:00 - 11:30 am, LAS A

#### Evaluation

Midterm 1 = 23%

Midterm 2 = 23%

Final exam (comprehensive, but weighted towards the last third of the lectures) = 44%

Assignment = 10% (5% for Part 1 and 5% for Part 2)

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

**Exam format:** Exams will be multiple-choice, 35 questions on each midterm and 70 questions on the final exam.

**Exam Notesheets:** You are allowed to bring one notesheet, 8 1/2 x 11 inches, both sides (or two single sided sheets), to the midterms and two notesheets (or four sides) to the final exam. The notesheets must be individually hand-written (not computer-printed, no photocopies) with your name and student number. They will be checked during the exam.

**Assignment:** See separate instructions posted on Moodle.

## Important Dates

**Midterm 1:** Feb 4, lectures 1-8 (35 questions, 80 minutes)

**Reading Week:** Feb 15-19

**Assignment Part 1 due date:** Monday, Feb 22, 4:30 pm

**Drop date:** March 4

**Midterm 2:** March 10, lectures 9-15 (35 question, 80 minutes)

**Assignment Part 2 due date:** Monday, March 21, 4:30 pm

**Final Exam:** (date TBA) lectures 16-22 (45 questions), plus lectures 1-15 (25 questions) (180 minutes)

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>

## Course Content

### Lecture Topics

Chapters correspond to Alberts, 6th ed. (2015)

Coverage of chapters will not be complete, and the lectures will cover only selected topics from the chapter. Students are advised to attend all lectures and study those sections of the text relevant to the lecture topics.

Exam questions will relate to the topics covered during lecture and will NOT cover material in the chapters that was not mentioned during lectures.

Date	Lecture #	Topic	Chapter
Jan 5	1	Introduction, Visualizing cells	9
Jan 7 & 12	2, 3	Membranes	10
Jan 14 & 19	4, 5	Transport of small molecules	11
Jan 21 & 26	6, 7	Compartments, protein sorting	12
Jan 28 & Feb 2	8, 9	Intracellular membrane traffic	13
Feb 4	1-8	Midterm 1	
Feb 9 & 11	10, 11	Cell signaling	15
Feb 15-19		Reading Week	
Feb 23 & 25	12, 13	Cell signaling	15
Mar 1 & 3	14, 15	Cytoskeleton	16
Mar 8	16	Cell cycle	17
Mar 10	9-15	Midterm 2	
Mar 15	17	Cell cycle	17
Mar 17	18	Cell death	18
Mar 22	19	Junctions & matrix	19
Mar 24 & 29	20, 21	Cancer	20
Mar 31	22	Stem cells	22

## Learning Outcomes

Upon successful completion of BIOL 2021, students will be able to demonstrate an understanding of: the internal organization of the cell, major cellular functions at the molecular level, and aspects of the interactions between cells in multicellular organisms. Upon completing the assignment, students will be able to evaluate the quality of websites that report on cell biology topics, and will be able to write about cell biology topics for a general audience.

## Resources

### Required text

Alberts *et al.* (2015) *Molecular Biology of the Cell*, 6th ed., Garland Publishing.

Note: There are significant differences between the fifth and sixth editions. Using an earlier edition of the textbook is not recommended.

The textbook is available in the bookstore as hardback or looseleaf, or rented through the bookstore, or on reserve in the Steacie Library.

It is also available in a variety of ebook formats, to buy or rent, at the publisher's website:  
<http://garlandscience.com/index.jsf>

Videos and animations used during lecture can be found at the Garland Science student website:  
[www.garlandscience.com/MBOC6-students](http://www.garlandscience.com/MBOC6-students)

**Course website:** on Moodle

Please check the Forums, Course FAQs and other postings. Be sure to read the other threads before you post a question to see if your question has already been answered.

**Lecture outlines:** A list of topics covered and figures used will be posted AFTER the lecture but complete lecture notes will NOT be posted. If you miss a lecture, you are responsible for getting notes from another student. The course director will not provide notes.

## Course Policies

**Midterms:** If a midterm is missed with a valid excuse and documentation (e.g. illness with a doctor's note), the weight will be distributed between the remaining midterm and the final exam so that the remaining midterm will be worth 30% and the final will be worth 60%. You must contact the course director within two days of the midterm exam and present valid documentation within one week of the exam to qualify for exemption.

**Deferred final exam:** If you miss the final exam with a valid excuse and documentation, you must fill out a Deferred Standing Agreement Form (see the Biology Undergraduate Office or <http://www.registrar.yorku.ca/exams/deferred>) within one week after the exam and have it signed by the course director. Doctor's notes are not sufficient; you must get your doctor to fill out the Attending Physician's Statement included in the petitions package (<http://www.registrar.yorku.ca/petitions/academic>). The format of the deferred exam for this course will be written essay questions, not multiple-choice. The date of the deferred exam will be announced later.

## Experiential Education and E-Learning

The course includes a website on Moodle where lecture outlines, interesting links, tips for success, exam answers and grades will be posted. Forums are available on Moodle for student questions and discussion.

## 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](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-andor-harassing-behaviour-in-academic-situations-senate-policy/>

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