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.

Prerequisite: 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.

Learning Objectives
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 demonstrate an awareness of how cell biology is covered in popular media.

Course Director
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.

Course website: on Moodle
Please check the Forums with 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.

Evaluation
Midterm 1 = 23%
Midterm 2 = 23%
Final exam (comprehensive) = 44%
Assignment = 10% (5% for Part 1 and 5% for Part 2)

There will (probably) be an opportunity to earn up to 2% extra credit for beta-testing new online teaching modules in cell biology. Details will be announced later and posted on Moodle.

Note: Final course grades may be adjusted to conform to Program or Faculty grade distribution profiles.
Lectures: T, Th 10:00 - 11:30 am, LAS A

Exams
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.
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/index.htm) 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/index.htm). 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.

Midterm 1: Feb 5, Chapt. 9-12 (35 questions, 80 minutes)
Assignment Part 1: Feb 26
Midterm 2: March 14, Chapt. 13-16 (first half) (35 question, 80 minutes)
Drop date: March 15
Assignment Part 2: March 26
Final Exam: (date TBA) Chapt. 16 (second half), Chapt. 17-20 and 23 (45 questions), plus Chapt. 9-16 (25 questions) (180 minutes)

Assignment: See separate instructions

Academic Integrity
Students are expected to be familiar with and follow York University’s policies regarding academic integrity. Please consult the website below for more details:
http://www.yorku.ca/academicintegrity/students/index.htm

Accommodation Statement
Students who feel that there are extenuating circumstances that may interfere with their ability to successfully complete the course requirements are encouraged to discuss the matter with the Course Director as soon as possible. Students with physical, learning or psychiatric disabilities who require reasonable accommodation in teaching style or evaluation methods should discuss this with the Course Director early in the term so that appropriate arrangements can be made.
Required text

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

Videos and animations used during lecture, and Chapter 23, can be found on the DVD packaged with the textbook. If you share a copy or buy a used copy, be sure to get access to the DVD. The textbook and DVD are available on reserve in the Steacie Library.

This textbook can also be RENTED through the bookstore:
http://bookstore.yorku.ca/

It is also available as an e-book from VitalSource:
http://store.vitalsource.com/show/9781136844423

A Kindle Print Replica version is also available from Amazon.

Lecture Topics
Chapters correspond to Alberts, 5th ed. (2008)
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.

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<thead>
<tr>
<th>Date</th>
<th>Lecture #</th>
<th>Topic</th>
<th>Chapter</th>
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<tbody>
<tr>
<td>Jan 8</td>
<td>1</td>
<td>Introduction, Visualizing cells</td>
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<tr>
<td>Jan 10 &amp; 15</td>
<td>2, 3</td>
<td>Membranes</td>
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<td>Jan 17 &amp; 22</td>
<td>4, 5</td>
<td>Transport of small molecules</td>
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<td>Jan 24 &amp; 29</td>
<td>6, 7</td>
<td>Compartments, protein sorting</td>
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<td>Jan 31</td>
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<td>Vesicular traffic</td>
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<td>Feb 5</td>
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<td>Midterm 1</td>
<td>9-12</td>
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<td>Feb 7</td>
<td>9</td>
<td>Vesicular traffic</td>
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<td>Feb 12</td>
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<td>Chloroplasts &amp; photosynthesis</td>
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<td>Feb 14</td>
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<td>Cell communication</td>
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<td>Feb 18-22</td>
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<td>Reading Week</td>
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<td>Feb 26, 28 &amp; Mar 5</td>
<td>12, 13, 14</td>
<td>Cell communication</td>
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<td>Mar 7 &amp; 12</td>
<td>15, 16</td>
<td>Cytoskeleton &amp; molecular motors</td>
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<td>Mar 14</td>
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<td>13-16 (first half)</td>
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<td>Mar 19 &amp; 21</td>
<td>17, 18</td>
<td>Cell division cycle</td>
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<td>Mar 26</td>
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<td>Apoptosis</td>
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<td>Mar 28</td>
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<td>Junctions &amp; adhesion</td>
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<td>Apr 2</td>
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<td>Cancer</td>
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<td>Apr 4</td>
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<td>Stem Cells</td>
<td>23</td>
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