

BIOL 2020, Cell Biology Syllabus

Professors: Winter term: Patrice Cote, Room 7124, Telephone 494.1813, E-mail Patrice@dal.ca

Fall term: Bill Pohajdak, Room 5076B, Telephone 494.1853, E-mail billpoh@dal.ca

Instructor: Mindy McCarville, Room 7017, Telephone 494.7072, E-mail mindy.mccarville@dal.ca

Lectures: 50 minute lectures on Monday, Wednesday, and Friday

Course Description and Goals:

Biology 2020.03 introduces you to the eukaryotic cell, the basic organizational unit of most living organisms and hence a critical focus for biological/medical research. The course is at the introductory level, and tends to be "content driven". That is, you are exposed to the language and concepts of cell biology, and it is necessary to both remember and comprehend this information. As the course proceeds, we draw material together and begin to develop an understanding of how structure and function are integrated in cells. The experimental approach for examining cells will be considered and you are required to apply and analyze information obtained in lectures. It is anticipated that Biology 2020 will prepare you for more advanced work in cell/molecular/biochemical areas, while revealing the excitement that characterizes the study of living cells.

Upon entry into the class, we assume that students are already able to:

- Describe the different macromolecules.
- Describe the basic structure and function of organelles.
- Describe the basic structure and function of biological membranes.
- Recall how cells produce and utilize ATP.
- Recall the steps relating to cell division.
- Recall how cells communicate and process signalling information.

By the time the course is complete, it is expected that students will be able to:

- Describe the chemical structure of proteins, lipids and carbohydrates
- Explain the composition, structure, and dynamics of the lipid bilayer.
- Outline the mechanisms required for ATP production in the cell.
- Describe endomembrane system components and dynamics, and explain their role in membrane assembly, protein targeting, protein secretion and endocytosis.
- Contrast the structures and functions of the three types of cytoskeletal filaments and their associated proteins.
- Describe DNA storage and other functions of the cell nucleus.
- Describe how cells are attached to each other and function as a tissue.
- Describe the pathways of inter and intracellular communication.
- Describe apoptosis.
- Illustrate how defects in the cell cycle lead to cancer.
- Design an experiment to study cell biology topics.
- Demonstrate proficiency in basic molecular and cell biology techniques.
- Generate appropriate tables and graphs to represent data.
- Write a formal laboratory report.

Textbook:

This course uses the most recent edition of Cell and Molecular Biology – Concepts and Experiments, by Gerald Karp. Published by John Wiley & Sons, Inc., N.J.

Marking Scheme:

Student assessment consists of four components as outlined below.

Component	% of Final Grade
Clicker Quizzes	5
Midterm Test	25
Laboratory	30
Final Exam	40

Please refer to the “Lab Schedule and Important Dates” document for additional information regarding dates.

Grade Scales:

- A+ (90 – 100)
- A (85 – 89)
- A- (80 – 84)
- B+ (77 – 79)
- B (73 – 76)
- B- (70 – 72)
- C+ (65 – 69)
- C (60 – 64)
- C- (55 – 59)
- D (50 – 54)
- F (<50)

Rules for Examinations:

1. Students must comply with the *Official Examination Regulations* listed in the Undergraduate Calendar. In particular, rules 3 and 6 will be *strictly enforced* (these are the ones stating that books and notes are not allowed, and that the use of communication/data storage device – for example: calculator, MP3 player, cell phone, digital watch – is prohibited, and that communication between students by whatever means is forbidden during exams). The only exception is devices required for medical purposes (eg. hearing aid).
2. The only justification accepted for absence from an exam is medical (a Doctor’s note dated to include the day of the exam), a family emergency (proof is required) or a wedding of a close family member (prior notification by letter or email and proof, eg. copy of wedding license, are required).

Academic Accommodations:

Students with disabilities, physical or psychological, are encouraged to register as quickly as possible at the Office of Student Accessibility & Accommodation (OSAA) if they wish to receive academic accommodations. To do so please phone 494-2836, email access@dal.ca, drop in at the new Mark A. Hill Accessibility Centre or visit our website www.studentaccessibility.dal.ca. Students are also reminded that, for your convenience, all forms are now available on our website.