

***BIOL 225 A01 (CRN 32643)***  
***Principles of Cell Biology***  
***Summer 2021***

**Instructors:**

Dr. Doug Briant (he/him)

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Mondays, 11-12 via Zoom (these may be adjusted to maximize availability)

Dr. Yuriko Carrington

Senior Lab Instructor and Laboratory Coordinator

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**Course Delivery:** the course will be delivered online in a mix of pre-recorded video lectures and live tutorials.

**Quizzes and Exams:** this will be split into sections for the topic quizzes, midterms and final exam. Midterm and final exam sections will also include practice problems

**Laboratory Materials:** this section has everything you will need for the laboratory component of the course

### **Required Materials**

**Textbook:** Becker's World of the Cell, Ninth Edition, Hardin, and Bertoni. *Pearson*, Boston, 2016.

**Lab manual:** *Biology 225 Principles of Cell Biology, Laboratory Manual*, Summer 2021.

### **Course Timeline**

| <b>Date</b> | <b>Event</b> | <b>covers video lectures</b> | <b>Where on Brightspace</b> |
|-------------|--------------|------------------------------|-----------------------------|
|-------------|--------------|------------------------------|-----------------------------|

**Topics:**

|   | <b>topic</b>                                   | <b>chapters</b> |
|---|--|-----------------|
| 1 | INTRODUCTION - introduction to cell biology    | 1, 4            |
| 2 | BIOMOLECULES - cell chemistry and biomolecules | 2, 3, 7, 8      |
| 3 | ORGANELLES - cells and organelles              | 4,10,11         |
| 4 | MEMBRANE SYSTEMS cytoplasmic membrane systems  | 12              |
| 5 | SYNAPTIC SIGNALLING                            | 13              |
| 6 | CELL SIGNALLING (non-neuronal)                 | 14              |
| 7 | CYTOSKELETON                                   | 15,16,17        |
| 8 | CANCER   | 19,24           |

### ***TOPIC 3: Cells and Organelles***

LEARNING OBJECTIVES: In this section, students will be introduced to the main functions of the organelles. Students will be expected to know the major functions of each organelle, and understand the adaptations each organelle has gained to maximize their ability to carry out these functions.

### ***TOPIC 4: Membrane Systems***

LEARNING OBJECTIVES: movement between organelles, or between organelles and the exterior of the cell, is often mediated by vesicles. The importance and significance of vesicular trafficking, as well as the mechanism, will be described in this section.

### ***TOPIC 5: Signalling 1 – Synaptic Signalling***

LEARNING OBJECTIVES: in this section, we will describe how impermeability of the cell membrane to ions allows membrane potential to be established. Students will be expected to know how the various ion channels contribute to an action potential by manipulating the permeability of ions.

### ***TOPIC 6: Signalling II –***

**Important dates and evaluation:**

**Tutorials:**

Weekly tutorials will be held **every Thursday** online via Zoom from 12:30 – 2:20. You are required watch video lectures prior to the tutorials. Coverage for each tutorial will be found on the course timeline. While not mandatory, you are highly encouraged to attend. Recorded tutorials will be posted within 48 hours on Brightspace

**Academic Integrity Quiz:**

You must score 100% on this quiz before you can complete any subsequent quizzes. You can make multiple attempts.

**Topic Quizzes:**

There will be eight topic quizzes, worth 0.5% each. These are participation quizzes, and any learner getting at least one correct answer will receive the full 0.5%. Quizzes must be completed by Friday, June 25 at 4pm.

**Midterms:**

There are two midterms, each worth 15% of your final grade. They will be held on Tuesday, May 25 and Tuesday June 08. Exams can be started between 8:30am – 8:30pm, and once you start you will have 90 minutes to complete the exam. Midterm exams are non-cumulative. You may use materials posted on the course Brightspace site, your textbook and your notes. You may NOT work with other students or use additi12 79518.87b166c hours on Brightspace

**\*\*\* since the course includes lab work, you are required to achieve satisfactory standing in both parts of the course and thus • you will not be permitted to write the final exam and will not receive credit for the course if you fail the laboratory component of the course.**

**Conversion of marks to final letter grades:**

|                      |         |                      |         |                      |         |             |      |
|----------------------|---------|----------------------|---------|----------------------|---------|-------------|------|
| <b>A<sup>+</sup></b> | 90 -100 | <b>B<sup>+</sup></b> | 77 - 79 | <b>C<sup>+</sup></b> | 65 - 69 | <b>F</b>    | < 50 |
| <b>A</b>             | 85 - 89 | <b>B</b>             | 73 - 76 | <b>C</b>             | 60 - 64 | <b>N **</b> | < 50 |
| <b>A<sup>-</sup></b> | 80 - 84 | <b>B<sup>-</sup></b> | 70 - 72 | <b>D</b>             | 50 - 59 |             |      |

**\*\* N grades**

Students who have completed the following elements will be considered to have completed the course and will be assigned a final grade:

***the final exam and the laboratory component must be completed to receive a grade other than “N”.***

Failure to complete one or more of these elements will result in a grade of “N” regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student’s GPA as 0. The maximum percentage that can accompany an N on a student’s transcript is 49

**COURSE INFORMATION AND POLICIES**

1. The Department of Biology upholds and enforces the University’s policies on plagiarism and cheating. These policies are described in the current University Calendar. All students are advised

6. The Department of Biology considers it a breach of academic integrity for a student taking a deferred examination to discuss the exam with classmates. Similarly, students who reveal the contents of an examination to students taking an examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar). Students must abide by UVic academic regulations and observe standards of scholarly integrity (no plagiarism or cheating). Online exams must be taken individually and not with a friend, classmate, or group, nor can you access notes, course materials, the internet, or other resources without the permission of the instructor. You are prohibited from sharing any information about the exam with others. Use of unauthorized electronic devices and accessing the internet and class material during exams is prohibited unless permission is granted by the instructor. Instructors may use Browser Lockdown Software to block access during classes and exams.
  
7. Requests for review/remark of a midterm exam must be made within one week of the exam being returned. Students are expected to promptly review midterm exams during scheduled review hours after marking has been completed.
  
8. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.
  
9. Supplemental exams or assignments will not be offered to students wishing to upgrade their final mark.
  
10. Anonymous participation in online classes is not permitted without written permission of the instructor.

**Online conduct statement:** The University of Victoria is committed to promoting critical academic discourse while providing a respectful and supportive learning environment. All members of the university community have the right to this experience, and the responsibility to help create, such an environment. The University will not tolerate racism, sexualized violence, or any form of discrimination, bullying or harassment.

