

**BIOL 225 A01/A02 (CRN 10330/10331)**  
**Principles of Cell Biology**  
**Fall 2024**

**Instructors:**

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**Lecture notes:** here you will find the pdf notes to use during lectures

**Lecture Recordings:** audio recordings will be available for most lectures.

**Textbook Chapter Problems:** practice problems from the textbook publisher.

**Quizzes and Exams:** this will be split into sections for the the Academic Integrity Quiz, Exit Competency Quiz, topic quizzes, midterms and final exam. Online quizzes and midterms will be located here. Midterm and final exam sections will also include practice problems.

**Academic Intergrity Quiz:** you must score 100% on this quiz before you will be allowed to write any Participation Quizzes or Midterms. This can be found in the

## ***Learning Objectives***

### ***Topic 1a – Discovery of Cell, a history***

LEARNING OBJECTIVES: early experiments surrounding the discovery of cells are introduced. Students will learn about the basic properties of cells.

### ***Topic 1b – Basic properties and strategies of cells***

LEARNING OBJECTIVES: the issues surrounding visualization of cells, which are generally smaller than the naked eye can observe, will be introduced. Students will be taught about various microscopic techniques and they will be able to apply this knowledge to decide which type of microscopy will be best suited to a particular application.

### ***Topic 1c - Cell Culture***

LEARNING OBJECTIVES: students will be introduced to the historical figures and early experiments performed in the development of cell culture techniques. They will have an understanding of challenges surrounding the culturing of animal cells. Students will also learn to recognize the advantages and disadvantages of working with animal cells in culture.

## ***TOPIC 2: Cell Chemistry and Biomolecules***

LEARNING OBJECTIVES: in this topic, the building blocks of the cells will be introduced. Students will be expected to how these blocks are assembled into functional macromolecules.

### ***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 – Non-neuronal Signalling***

LEARNING OBJECTIVES: students will be expected to understand the basic eukaryotic signalling pathways. The importance of regulation, and the complexity of combining signalling pathways will be outlined.

### ***TOPIC 7: Cytoskeleton***

LEARNING OBJECTIVES: students should understand the structure and importance of the three main cytoskeletal elements. The dynamic nature of the cytoskeleton will be explored and a simple model of motility presented. Finally, the significance of cell-cell </MCID 4 >>BDC 0



\*\* N grades

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.

8. Deferral of a final exam must be requested with an Academic Concession form and submitted directly to Undergraduate Records. Deferred final exams for fall term courses will be arranged by the instructor. Deferred final exams or spring term courses will be arranged through Undergraduate Records and must be written before the end of the summer term as stipulated in the University Calendar.
9. Requests for review/remark of a midterm exam must be made within one week of the exam being returned.
10. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.
11. Supplemental exams or assignments will not be offered to students wishing to upgrade their final mark.
12. Anonymous participation in online classes is not permitted without permission of the instructor.

### **Centre for Accessible Learning**

Students with diverse learning styles and needs are welcome in this course. In particular, if you have accessibility considerations that may require accommodations, approach the Centre for Accessible Learning (CAL) as soon as possible in order to assess your specific needs. <https://www.uvic.ca/services/cal/index.php> See for Aay10.5 (i)-6.6ou/MCID 13se