

UNIVERSITY OF VICTORIA

Course Outline

BIOL360 Cell Biology

Fall 2022, A01 (10430)

Instructors:	Dr. Ben Koop bkoop@uvic.ca	Dr. Jürgen Ehling je@uvic.ca
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Office hours:	by appointment, please email to arrange a time, via Zoom or in person.
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Class time:	Monday & Thursday 1 pm - 2.20 pm in David Strong Bldg, C103. Thursday September 8 th to Monday December 5 th .
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Last updated: 30. August 2022

Welcome!

We acknowledge and respect the lək'wəŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day. We are thankful to be able to work, learn, and live on this land.

We welcome everyone to learn in this course and we respect every human being, regardless of ethnic backgrounds, religious beliefs, sexual orientations, genders, socioeconomic backgrounds, and abilities. We welcome young parents and invite their children to lectures if missing lecture would be the alternative.

Goals for this course:

We selected interesting and complex topics of cell biology in order to introduce you to major concepts and working techniques of cell biology. We want you to understand general principles of cell organization, intracellular transport, cell communication, signal transduction pathways & cell cycles including apoptosis. Occasionally we include peer reviewed research papers in order to show you how textbook knowledge is created, and how experiments are performed. We want you to understand experimental set up, and be able to interpret figures presenting research results. Our main goal is to teach you the scientific way of thinking. We look forward to the continuing studies of the fascinating world of cell biology!

Learning Outcomes:

By the end of this course, you will:

- know how to approach and **study cells** and **cellular processes**. You will learn a variety of experimental approaches in general and applied to specific examples over the entire term.

- learn about the cell's **basic housekeeping** machinery, e.g. directing proteins to their proper location, and cell replication. What you will learn here are the best-known cell biological examples, and are basically the tip of a largely still unknown iceberg!
- be able to **read and interpret figures** from peer reviewed scientific papers

Tentative Class Schedule:

- Welcoming, rules and regulations (JE & BK)
- Introduction to Cell Biology (parts of chapters 1,3, 4, 12, 14) (JE)
- Working with cells: visualizing cells and manipulation of cells (chapters 8, 9) (JE)
- Membranes (chapter 10) (JE)
- Membrane transport of small molecules & the electrical properties of membranes (chapter 11) (JE)
- Intracellular compartments and protein sorting (chapter 12) (JE)
- Intracellular vesicular traffic (chapter 13) (JE)
- Cell communication and signaling pathways in cells (chapter 15) (JE)
- Cytoskeleton (chapter 16) (BK)
- Cell cycle (chapter 17) (BK)
- Apoptosis (chapter 18) (BK)
- Cancer (chapter 20) (BK)

Textbook:

Molecular Biology of the Cell, **6th edition**, Alberts B, Johnson, A, Lewis J, Morgan, Raff M, Roberts K, Walter P, Garland Science, ISBN 978-0-8153-4432-2. The textbook is recommended, and the purchase is optional.

NOTE: ***this is the last year we will use this edition of the textbook – so look for a used copy in the bookstore or online***

The book is available to you in various forms:

- NEW: \$273.50 (at UVIC bookstore)
- USED: \$205.50 (at UVic bookstore)
- Etext: \$97.95 for 180 -day license (via VitalSource.com or the UVic bookstore)
- And there is always Amazon.ca

Lecture notes and resources:

Lecture notes and / or slides will be posted on BrightSpace. We recommend that you bring lecture slides / notes to classes to add comments on slides and answer questions.

Any lecture materials uploaded to BrightSpace are for personal use ONLY and are not allowed to be distributed without permission from the lecturer. The material is protected under copyright law, even if not marked with a ©. Any further use or distribution of materials to others requires the written permission of the instructor.

To be successful, we strongly recommend that you **TURN OFF all online sources** (social media/cell phone/YouTube/email/text messaging...) **during class time AND while you study at home.** Digital communication is distracting and you are not able to concentrate on lecture material. There are many studies showing that students' grades are negatively affected by focusing on **off task** material. It is also important to stay healthy, both physically and mentally! Make sure that you get the sleep you need, eat well, exercise and make sure to create a healthy work-life balance. Avoid last minute study panic by working regularly throughout the term: we recommend that you spend at least 2-3 hours studying after each lecture!

Life can happen and it can happen to every one of us. If there is any situation arising that makes it difficult for you to be successful in this class, please come and talk to us. I am sure that together we can find solutions!

Evaluation:

- **Participation questionnaires: 4%.** You are welcome and encouraged to ask questions at any time during class, but we will have dedicated question and answers (QA) sections throughout this course. On 2-4 occasions, these QA sessions will be kicked off with a few example questions. We will discuss the answers to these question during the QA session. You will be given the opportunity to answer these questions outside of class to get the 1-2 participation marks per session. You will get full marks regardless if you answered the question correctly or not, because this is a participation exercise only. If you do not participate in these questionnaires, you will get zero marks for them.

- **Exams:** We will write three in class exams, more information about exam format and types of questions will be provided in class:

Midterm Exam 1 on Oct 6th	29%
Midterm Exam 2 on Nov 7th	29%
Final Exam (Cumulative) in December	36%

IMPORTANT NOTE: We will not offer in-course deferred exams for midterm 1 and 2! If you are unable to write a midterm, you must let us know the reason through email to become excused from the midterm. If you miss one midterm, the other midterm and the final exam will count proportionally more (42% and 52%, respectively). If you miss both midterm exams you will not be able to complete the course and will get an N. The final exam is an essential course component; if you miss the final, you will receive an N, but you are eligible to [request an academic concession](#). The maximum percentage that can accompany an N on a student's transcript is 49.

- **Artistic assignment** (or: the fun assignment): **2%** participation. Get creative and produce some piece of artwork related to the course content: write a poem about the cell, draw or paint a picture related to our topics, decorate your weekend pancake to turn it into an organelle, dance

or sing about your favorite scientific pathway and record it, create a meme about cell signalling, or come up with your own creative idea and relate it to class content. Anything goes!

As a participation assignment, we will not grade your artwork, but to get the 2 marks you will need to submit something to BrightSpace. We may share a selection of your art with the class, please let us know if you do not want us to do so.

The artistic assignment can be done anytime but no later than **Dec 5th 2022**.

General regulations:

To determine final grades for the course, we will round your course score to the nearest whole percent. We cannot change your grade for any reason, except if we made an error calculating it. There is no extra work that you can do to raise your grade.

Please read the appropriate section of the current UVic Academic Calendar regarding your rights and obligations. It is your responsibility to be aware of ADD/DROP dates published in the Calendar. If you intend to drop this course, please do so officially and give up a space for students who might be on a waitlist.

You are expected to observe UVic standards of scholarly integrity especially with regards to plagiarism and cheating. If you cheat during an exam you will be graded with 0 for this exam and the incident will be reported. Further consequences might apply.

UVic and we as instructors are committed to promoting, providing and protecting a supportive and safe learning and working environment for you and us.

Important Dates

In the UVic calendar you will find a complete list of important dates, but the ones we have listed below are the ones that will matter to students in Biology 360.

First term classes begin for all faculties Wednesday, September 7th

Last day for 100% reduction of tuition fees for standard first term and full year courses Tuesday, September 20th

Last day for adding courses that begin in the first term Friday, September 23rd

National Day for Truth and Reconciliation Friday, September 30th

Thanksgiving Day Monday, October 10th

Last day for 50% reduction of tuition fees for standard courses Tuesday, October 11th

Last day for withdrawing from first term courses without penalty of failure Monday, October 31st

Reading Break for all faculties/Remembrance Day Wednesday, November 9th - Friday, November 11th

National Day of Remembrance and Action on Violence Against Women Monday, December 5th

Last day of classes in first term for all faculties Monday, December 5th

Other resources for you to maintain a healthy student life:

Stay healthy!

A note to remind you to take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep, and taking some time to relax. This

will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle. **You are not alone.**

Support Connect: 24/7 help by phone or online <https://www.uvic.ca/student-wellness/contacts/emergency-contacts/index.php#ipn-supportconnect-24-7-help>

Student Wellness Centre to support students' mental, physical and spiritual health
<https://www.uvic.ca/student-wellness/>

Centre for Accessible Learning - The CAL staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations
<https://www.uvic.ca/services/cal>. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Office of Indigenous Academic and Community Engagement (IACE) has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty and administration in Indigenous ways of knowing and being.
<https://www.uvic.ca/services/indigenous/students/index.php>

Office of Student life: Student conduct, Student mental health, Sexualized violence awareness,... : <https://www.uvic.ca/services/studentlife/index.php>

We hope you have a great fall term with Bio360 Cell Biology!