

Cell Biology, Biol 360, Fall 2021

Welcome!

We acknowledge and respect the lək^wəŋən peoples on whose traditional territory the University of Victoria stands, and the Songhees, Esquimalt and WSÁNEĆ peoples whose historical relationships with the land continue to this day. We are thankful to be able to learn together on this land, and strive to make the world a better place.

We welcome everyone to learn in this course and we respect every human being, including all people from all ethnic backgrounds, religious beliefs, sexual orientations, genders, socioeconomic backgrounds and abilities.

We want to welcome parents, and we 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!

Prerequisites: Biol230 OR BME200 and BME201, AND one of Bioc299, Bioc300A, Bioc300B (Bioc300A or 300B can be taken as corequisites). Please be aware that if you drop a co-requisite, the system will automatically drop you from this course as well. This course is recommended if you plan to continue with medical and/or molecular fields.

Instructors: **Dr. Ryan Gawryluk**

email: ryangawryluk@uvic.ca

Office hours: via Zoom, please email to arrange a time

Dr. Barbara Ehling (Course coordinator)

email: behlting@uvic.ca

office hours: via Zoom, please email to arrange a time

You can find out more about us on the Brightspace 'Meet your instructor' site!
Office hours are for you to connect with us, discuss lecture material, and for us to get to know each other.

Class time and location: Monday & Thursday 1 pm -2.20 pm in Ell167.
Classes start Thursday September 9th and end Monday December 6th.

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.

The book is available to you in various forms:

- NEW: \$273.50 (26 available at UVIC bookstore)
- USED text: \$205.95 (18 copies available at UVic bookstore)
- Looseleaf: \$183.95 (16 copies available at UVic bookstore)
- Etext is available via VitalSource.com or via the UVic bookstore (\$97.95 for 180 -day license)
- And there is always Amazon.ca

Lecture notes will be posted on Brightspace website for you. I recommend that you bring the lecture notes to classes to add comments on slides and answer questions.

Provided lecture slides are for personal use ONLY and are not allowed to be distributed without permission from the publisher. 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.

We plan to record the live lectures with Echo360 and post the recordings on Brightspace.

Learning Outcomes:

-You will learn 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.

-You will learn about the cell's **basic housekeeping** machinery, e.g. directing proteins to their proper location, and cell replication. What we will teach you here are the best known cell biological examples, and are basically the tip of a large still unknown iceberg!

-You will learn to **read and interpret figures** from peer reviewed scientific papers

-You will learn to **collaborate with your peers** in a group project and the benefits of teamwork

Tentative Class Schedule

- Welcoming, rules and regulations (BE & RG)

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

How to be successful

In order to be successful, we strongly recommend that you **TURN OFF all online sources** (social media/cell phone/facebook/twitter/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.

COVID-19 regulations

We require you to wear masks in the classroom, in accordance with the latest provincial health mandates (August 24th).

If you are not feeling well, stay at home. Do the COVID self-assessment and get tested if necessary. If you miss class, you will be able to catch up by watching the video recording of live classes on Brightspace.

If we as instructors have to stay home and self-isolate following the orders of the public health ministry, we will deliver course content by pre-recorded lectures.

Evaluation:

- **Q & A assignment: 3%** participation. In this course we will have a Question & Answer forum for **cell biology** related topics. Everybody can post questions and everybody can answer/comment on the questions. You get a participation mark for ASKING at least one question (1%) and for ANSWERING at least one question (2%) anytime during the term, but not later than **Dec 6th 2021**.

- **Paper assignment: 10%**, completed in groups. Students will be put into groups on Brightspace. The paper will be announced at the end of October, and students will have about one week to read it. Questions for the paper assignment will be

given on **Thursday, Nov 4th**, and students are working in groups to answer and submit the answers as a group on Nov 15th 2021.

- **Artistic assignment** (or: the unusual assignment): **2%** participation. Get creative: write a poem with scientific words used in the class, draw a picture related to our topics, dance and record your favorite scientific pathway or come up with your own creative idea and relate it to class content. Look for the submission drop box on Brightspace. Can be done anytime but no later than **Thursday Dec 6th 2021**.

- **Exams:** We will write three exams on Brightspace:

Exam 1 on Oct 7th 25%

Exam 2 on Nov 8th 30%

Final in December 30%

We will offer in-class **live Q&A sessions** at 1 pm for 30 min in the last class before each of the exams: Oct 4th, Nov 4th and Dec 6th.

You can write the exam in the classroom or you can write the exam at home. The exams will be open book, you are allowed to access your notes/bring a cheat-sheet, but you have to take the exam as an individual and you are NOT allowed to contact any person during the exam.

Students who are writing exams in the classroom are expected to bring their own mobile devices to write the exam. If you have no mobile device, please contact the course coordinator (BE) at the beginning of term and we will find a solution for you. Remember: I can only help you, if you inform me about any potential issue!

If you miss one exam the other two exams will count more, if you miss two or more exams you will get an N. You have to write the final exam.

Exam times can be very stressful for you. In order to stay healthy physically and mentally make sure that you get enough sleep, eat well, exercise and take breaks. Mindfulness, meditation and yoga might help you to stay mentally healthy. 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 me (BE). I am sure that together we can find solutions!

General regulations:

Grading system:

In determining final grades for the course, our spreadsheet will round your course score to the nearest whole percent. That is, the official course grade that will be submitted for you.

We cannot change your grade for any reason, except if we have made an error calculating it. There is no extra work that you can do to raise your grade.

Failure to complete at least two exams 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.

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 fuller list of important dates, but the ones we have listed below are the ones that will matter to students in Biology 360.

Thursday, September 9	First BIOL360 lecture
Tuesday, September 21	Last day for 100% reduction of tuition fees for standard first-term and full-year courses
Friday, September 24	Last day for adding classes
Thursday, September 30 th	National Day for Truth and Reconciliation, no classes
Monday, Oct 4 th	1 pm live Q&A session for 30 min with Dr. Barbara E., lecture after
Thursday, October 7 th	BIOL360 Exam 1
Monday, October 11	Thanksgiving holiday, no classes

Tuesday, October 12	Last day for 50% reduction in tuition fees for standard courses. 100% of tuition fees will be assessed for courses dropped after this date.
Sunday, October 31	Last day for withdrawing from courses without penalty of failure
Thursday Nov 4 th	1 pm live Q&A session for 30 min with Drs. Ryan G. and Barbara E. , lecture after
Monday, November 8	BIOL360 Exam 2
Wed- Fri, November 10-12	Reading break, no classes
Monday, December 6 th	1 pm live Q&A session for 30 min with Dr. Ryan G., lecture after
During exam period	BIOL360 Final Exam

**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 that you are enjoying a great fall term with Bio360 Cell Biology!