

Cell Biology, Biol 360, University of Victoria Fall 2024, CRN: 10382

Welcome!

We acknowledge and respect the lək̓ʷəŋən peoples on whose traditional territory the University of Victoria stands, and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.

I am very happy to live on this beautiful land, home to humans for thousands of years. Let's be thankful 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.

If finding childcare is a challenge, we welcome students and their children to lectures if missing lecture would be the alternative.

Your instructors

- *Dr. Ryan Gawryluk*

email: ryangawryluk@uvic.ca

Connect: please email to arrange a time

- *Dr. Barbara Ehltling* (Course coordinator, lecturer)

email: behltling@uvic.ca

Connect:

- via email. My goal is to respond no later than within 24 h on business days.
- in person. Just send me an email and we arrange a meeting time. Office hours are for you to connect with me, discuss lecture material, and for us to get to know each other.
- My background: You can find out more on Brightspace 'Meet your instructor' site!

Intended Learning Outcomes for BIOL360 Cell Biology:

At the end of this course, you will ...

- be familiar with and understand the theory of **major isolation and visualization techniques**, such as isolation of cells and organelles, cultivation of cells, and microscopy of cells on a detailed and up-to-date level.

→Your knowledge about techniques will enable you to know when to apply which technique for specialized research questions.

- be familiar with the current knowledge of **cellular processes that are most studied and best understood** including membrane composition and transport across

membranes, intracellular protein localization, cell signaling, cytoskeleton assembly and disassembly, cell cycle regulation, apoptosis and cancer.

→ Your knowledge about pathways will enable you to find out how potential mutations might affect pathways and how pathways interact, for example the impact of mutated cell cycle genes in cancer and the impact of the cytoskeleton on cell division.

- **read and interpret figures** from recently published peer reviewed scientific papers
- **collaborate with your peers** in pair discussions, and a group paper project

→ You will learn to draw conclusions from graphs by using your knowledge and discuss with your peers.

→ Your overall knowledge about most common molecular techniques and cellular pathways will enhance your scientific thinking.

→ The active learning components in this class hopefully increase your joy for science and overall understanding of scientific concepts.

- perform to perfection **major life skills** such as meeting deadlines, punctuality, time management, collegiality, open discussion with peers and instructor, being proactive aiming for problem solving rather than complaining.

Designated Class time and location:

Monday and Thursday at 1pm -2.20 pm in ELL 168. Classes start Thursday Sept 5th and end Monday Dec 2nd.

Class time is our time together and critical for your active learning journey. We designed this course as an active learning experience with student engagement in form of group work and active discussion. It is important that each one of us takes an active part in this class by active listening and asking questions.

Prerequisites:

Biol230 OR BME200 and BME201, AND one of Bioc 299, Bioc300A, Bioc300B (Bioc300A or 300B can be taken as corequisites). Please be aware that if you drop a co-req the system will automatically drop you from this course as well! Students who are missing one pre/co-requisite might be allowed to register with special permission, however it is the students' responsibility to catch up with any missing background knowledge.

Tentative Class Schedule

- Welcoming, rules and guidelines
- Introduction to Cell Biology (parts of chapters 1,3, 4, 12, 14)
- Working with cells: visualizing cells and manipulation of cells (chapters 8, 9)
- Membranes (chapter 10)
- Membrane transport of small molecules & the electrical properties of membranes (chapter 11)
- Intracellular Compartments and Protein sorting (chapter 12)
- Intracellular vesicular Traffic (chapter 13)
- Cell communication and signaling pathways in cells (chapter 15)
- Cytoskeleton (chapter 16)
- Cell cycle (chapter 17)
- Apoptosis (chapter 18)
- Cancer (chapter 20)
- Wrap up and catch up, Review, evaluation...

Textbook (optional), Lecture notes, and Lecture Recordings:

- **Textbook (optional):** Molecular Biology of the Cell, 7th edition (latest edition), Alberts B, Johnson, A, Lewis J, Morgan, Raff M, Roberts K, Walter P, Garland Science, ISBN 978-0-393-88482-1

the textbook can be purchased at the bookstore:

9780393884821 Hardcover

9780393884845 Loose leaf,

9780393427080 360 day licence E-TEXT

- Etext also available via VitalSource.com and at Norton

<https://digital.wwnorton.com/mboc7>

- The UVIC library has the book on reserve.

If you get your hands on a used textbook of the 6th edition, you may use it, but it is your responsibility to find the appropriate readings.

- **Lecture Notes** will be posted on Brightspace (content-> weeks). I recommend that you bring the lecture notes to classes to add comments on slides and answer questions. **Provided course material (including lecture slides, case studies and exams) are made available for instructional purpose ONLY and are not allowed to be distributed without permission.** The material is protected under copyright law, even if not marked with a ©. Any further use or distribution of materials to others through online note-sharing violates the Policy on Academic Integrity.
- **Lecture Recordings:** Lectures will be recorded with Echo360 (video files) and/or voice (audio files) and posted on Brightspace after each lecture.

Evaluation:

- **Two Midterms** during class time, worth 20 & 25% on Oct 3th and Nov 4th 2024

If you miss one midterm due to a valid reason, please inform BE ASAP. You must write at least ONE midterm to successfully complete this class.

If you miss both midterms, you will have to write a deferred midterm (combined materials covered for midterms one and two).

If you only write one midterm, the final exam will be worth more accordingly.

- **Final exam: 35% (30% if you do the optional EDI assignment)**, during exam period in December, cumulative. You must write the final exam to complete this course.

All exams (both midterms and final) will

- be **invigilated** and written on your **personal electronic device on Brightspace**.
- use **universal design**, and **all students** are allowed **1.5X times** (for a 50 min midterm exam everybody gets 75 min). Students with accommodations with more than 1.5 X must contact Centre for Accessible Learning (CAL) to arrange for exam invigilation.
- allow a **ONE-page study-sheet** (AKA cheat-sheet): hard copy ideally hand written (NO digital version).

- **Mini quizzes** during lectures: **8%** (1% each). There will be 8 mini quizzes on Brightspace on random times during class time (accessible for 24 h). **It is your responsibility to log on to complete and submit the mini quiz on your own electronic device.** If you miss a class, it is your responsibility to complete the quiz at home within 24 h. There will be no deferred mini quizzes.
- **Paper assignment: 10%** completed in groups **during class time** on Monday Oct 21st. You should read the paper beforehand. During the assignment students will answer questions about the paper as a group. There will be no deferred group paper assignment. If you are sick on the day of the assignment, contact BE immediately to discuss options.
- **Artistic assignment: 2%** participation. Get creative: write a poem with our scientific words used in the class, paint a picture related to our topics, dance your favorite scientific pathway or come up with your own creative idea and relate it to class content (video, podcast, meme...). Indicate on your submission if you are ok with me presenting your work to the class/in the biology hallway. Look for the submission drop box on Brightspace. Can be done anytime but no later than Dec 2nd 2024.
- **Optional assignment** (5% of final grade if submitted no later than Dec 2nd 2024). If submitted on time the final exam will count 5% less of the final grade. Identify an injustice or EDI (equity, diversity, inclusion) issue related to cell biology and present your findings in your preferred mode (video, podcast, poem, ...). You must cite at least one reference. Indicate on your submission if you are ok with me presenting your work to the class.

How to be successful

Understanding the details of cellular pathways is so much fun! This course is a success when you learn, understand and be happy. Making mistakes is a good way to learn and is never a failure.

We strongly encourage you to **attend (!) lectures, listen, take (handwritten) notes and engage during discussion sessions with your peers**. We strongly encourage you to ask if you have questions! Class time is our time together for asking/answering question. It is very important to stay on top of class material and study for a few hours after each lecture. Write your own summaries, compare, and ask yourself 'what if' questions (e.g. What if there is a mutation in gene X, how would this affect the cell?) Form **study groups** with your peers: 4-5 students is a good group size. Only once you can talk about the material you really understand it.

I want you to know that **off – task activities** like checking email, text messaging, checking social network sites, is **negatively affecting students' grades (your own and your peers next to you) by more than 10% (Sana et al. 2013, Computers and education 62, 24-31)**. **I strongly recommend that you turn off your off – task aps/programs during class time and study time to allow you to focus and not be distracted by social media and other non-course related sites!**

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.

Sept 4th 2024 First day of classes at UVic

Sept 5th: First lecture for biol360 at 1 pm in ELL168

Sept 17th: Last day for 100% reduction of tuition fees

Sept 20th: Last day for adding courses that begin in the first term

Sept 30th: National Day for Truth and Reconciliation, UVic closed, no lecture
Last day for paying first term fees without penalty

Oct 3rd: midterm 1

Oct 8th Last day for 50% reduction of tuition fees for standard courses

Oct 14th: UVic closed (Thanksgiving), no lecture

Oct 21st: in class group paper assignment

Oct 31st Last day for withdrawing from first term courses without penalty of failure

Nov 4th: Midterm 2

Nov 5th: *3 - 4 PM Navigation Neurotypical Job Search Processes (5 Days of Action)*

- 4.30 - 5.50 PM *Foundation to Equity, Diversity and Inclusion (5 Days of Action)*
- Nov 6th: 10 - 12 PM *Reflections on UVic's Indigenous Plan, one year later (5 Days of Action)*
- 1 - 2 PM *Accessibility Action at UVic (5 Days of Action)*
- 2 - 3.30 PM *Grad Students Panel (5 Days of Action)*
- Nov 7th: 10 - 11.20 AM *Foundations to Equity, Diversity and Inclusion (5 Days of Action)*
- 1 - 2.20 PM *Sexualized Violence Prevention and Response Training (5 Days of Action)*, Biol360 lecture as usual!
- Nov 8th: 10 - 11.20 AM *Scarborough Charter: Advancing Black Flourishing and Inclusion (5 Days of Action)*
- Nov 11-13: Reading break, no classes
- Dec 2nd: Last lecture for biol360**
- Dec 4th: Last day of classes at UVic
- Dec 7-20th: Exam period

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 (Mindfulness, meditation and yoga might help you to stay mentally healthy). Human societies have respected one day of rest in a 7-day week over hundreds of years. I believe that taking one day off per week is essential for your mental health and overall well-being. Therefore, we are respecting your weekends (no emails or deadlines on weekends).

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!** This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle.

If you are not feeling well, stay at home. If you miss class, you will be able to catch up by watching the video/listen to the audio recording of live classes on Brightspace.

If I as instructor have to stay home, I will deliver course content by pre-recorded lectures.

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 essential components of this course (minimum of four quizzes, one midterm and the final exam) will result in a grade of “N” regardless of the cumulative percentage on other elements of the course. The maximum percentage that can accompany an N on a student’s transcript is 49. N is a failing grade and factors into GPA as a value of 0.

Please read the appropriate section of the current UVic Academic Calendar regarding your rights and obligations

(<https://www.uvic.ca/calendar/future/undergrad/index.php#/policies?expanded=Undergraduate%20Academic%20Regulations>).

You are expected to **observe UVic academic regulations and standards of scholarly integrity** especially with regards to plagiarism and cheating. Please check out this link: <https://www.uvic.ca/library/help/citation/plagiarism/>

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

We hope that you are enjoying a great term with Bio360 Cell Biology!

UVic support centers:

Centre for Accessible Learning (CAL): promote educational accessibility for students with disabilities and chronic health conditions. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

<https://www.uvic.ca/accessible-learning/index.php>

Counselling Services - Counselling Services can help you make the most of your university experience. They offer free professional, confidential, inclusive support to currently registered UVic students. Due to covid19 service is now offered by phone

<https://www.uvic.ca/services/counselling/>

If you have any **technical issues** using Brightspace, please contact the **computer help desk** via email (helpdesk@uvic.ca)

Elders' Voices - The 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/programming/elders/index.php>

Health Services - University Health Services (UHS) provides a full service primary health clinic for students, and coordinates healthy student and campus initiatives. UVic Health has transitioned to offering services almost entirely by telehealth

<http://www.uvic.ca/services/health/>

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. Supporting Indigenous students.

<https://www.uvic.ca/services/indigenous/>

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

Sexualized Violence Prevention and support: how to start conversations about consent, support on and off campus

<https://www.uvic.ca/sexualizedviolence/>

Student support services: the office of registrar helps with academic concession, fee reduction appeals, room bookings,... <https://www.uvic.ca/registrar/students/index.php>

Student Wellness Centre to support students' mental, physical and spiritual health by a team of counsellors, nurses, physicians, spiritual care providers.

<https://www.uvic.ca/student-wellness/index.php>

Support Connect: offers short term solution focused counselling, available 24/7 help by phone or online. Supported by counsellors, consultants and life coaches.

<https://www.uvic.ca/student-wellness/wellness-resources/supportconnect/index.php>

UVic Bounce: Stories about resilience and how we stand up again after falling.

<https://uvicbounce.ca/>