

## Cell Biology Biol360 Summer 2025 – ONE PAGE Summary

- **Everyone is welcome!**
- **Instructor:** Barbara Ehltling, [behlting@uvic.ca](mailto:behlting@uvic.ca)
- **Evaluation:**
  - Weekly invigilated online *quizzes* every Tuesday in class (count best 5 out of 6): 40%
  - *Final exam* invigilated online on June 27 in class: 40% (deferred option available)  
→ one page letter sized hand-written study sheet is allowed for quizzes and final exam
  - *Peer teaching*: sign up for a date on course webpage, upload one day before no later than 6 pm, present on your day 10 min, 8% (schedule may vary over time)
  - *Group Paper assignment* on June 11 in class, read paper one week before: 10%
  - *Artistic assignment* 2% participation due June 26
  - *Optional EDI assignment* 3% due June 26
- **To pass the course and avoid an N grade, students**
  - *write minimum of three quizzes,*
  - *write final exam,*
  - *peer teach,*
  - *submit paper assignment.*
- **Material:**
  - *Lecture slides* posted on course webpage
  - *Lecture recordings* may be available on course webpage
  - “The molecular biology of the Cell” by Alberts, 7<sup>th</sup> ed *textbook*, optional
  - Selected *textbook figures* for peer teaching posted on course webpage
- **Need help?**

If you have any questions, here are places to find answers:

  - Most questions can be answered by reading the *course outline*
  - Important information will be conveyed during *class time* and /or via course webpage *announcements*. Students are expected to read their emails.
  - Ask your *peers*
  - Contact *me*

## Cell Biology, Biol 360, University of Victoria Summer 2025

### Welcome!

*We acknowledge and respect the Lək̓ʷəŋən (Songhees and X̱wsepsəm/Esquimalt) Peoples on whose territory the university stands, and the Lək̓ʷəŋən 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.

We want to welcome parents, and we invite their children to lectures if missing lecture would be the alternative.

### Your instructor

*Instructor: Dr. Barbara Ehltng* (Course coordinator, lecturer)

*email: [behlting@uvic.ca](mailto:behlting@uvic.ca)*

How to connect with me?

- You can always connect with me via email. My goal is to respond within one business day (Monday – Friday).
- Want to meet in person? Just send me an email and we arrange a meeting time (preferred times: right after class). Office hours are for you to connect with me, discuss lecture material, and to get to know each other.
- Want to know about my background? You can find out more on the 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.

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

- be familiar with **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.

- actively engage with class material by **teaching your peers** key concepts in short presentations.

→ 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:**

Tuesday, Wednesday and Friday at 8.30 am -10.20 am in Cun146. Classes start Tuesday May 13<sup>th</sup> and end Friday June 27<sup>th</sup>.

Class time is our time together and critical for your active learning journey. I designed this course as an active learning experience with student engagement in form of student presentation, 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):

Molecular Biology of the Cell, 7<sup>th</sup> edition, Alberts B, Johnson, A, Lewis J, Morgan, Raff M, Roberts K, Walter P, Garland Science, ISBN 978-0-393-88482-1

The book is available to you in various forms:

- the textbook can be purchased at the bookstore:  
9780393884821 Hardcover \$223.95,  
9780393884845 \$179.50 Loose leaf,  
9780393427080 360 day licence \$119.95 E-TEXT
- Etext also available via VitalSource.com and at Norton  
<https://digital.wwnorton.com/mboc7>
- The UVIC library has the book on reserve.
- Figures from selected chapters are posted on Brightspace

We are using the latest edition of the textbook. If you get your hands on a used textbook of the 6<sup>th</sup> edition, you may use it, but it is your responsibility to find the appropriate readings.

For the in-class presentation (see below) please ONLY use the latest 7<sup>th</sup> edition!

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 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.

Lectures (and student presentations) may be recorded with Echo360 (video files) and/or

voice (audio files) and posted on Brightspace after each lecture.

### **Evaluation:**

- **Weekly quizzes 40%** every **Tuesday** (May 20, 27, June 3, 10, 17, 24<sup>th</sup>) at **8.30 am** invigilated **in class** on Brightspace. Students with accommodations should start earlier to be back in class for lectures at 8.45 am.

Each quiz is worth 8%. Only the **five best** quizzes (total of 40%) will be used for your final grade (you have ONE free-bee). If students miss more than one quiz, the missed % will be added to the final exam. You must write at least **three** quizzes to successfully complete this class. If you miss more than three quizzes alternative forms of evaluation might be necessary. This must be arranged in writing (email) within one week of missing the fourth quiz. There are no deferred options for weekly quizzes.

- **Final exam: 40%**, on last day of class, Friday **June 27<sup>th</sup>**, at 8.30 am – 10.20 am, cumulative, invigilated in class on Brightspace. You must write the final exam to complete this course. If you miss the final exam apply for RAC and contact BE via email immediately to arrange for deferred final exam date and location.

**It is your responsibility to log on to complete and submit the quiz/final exam on your own electronic device.** If you have no electronic device, please contact me ASAP.

The weekly quizzes and the final exam are **invigilated**. If you are unable to attend the quiz/final in person, please contact BE via email immediately to discuss options.

Please note: for all six quizzes and the final exam you are allowed to bring a ONE page hand-written letter-sized study-sheet.

- **Peer teaching: 8%**, every student will sign up for one topic which will be teach 10 min in class. Up to three student per lecture will peer teach.

The peer teaching is a key element of your learning in Cell Biology putting you in the driver seat. There are two documented aspects why this helps you with learning:

1. **Students learn more by teaching others.** To teach each other and to talk about a topic, students need to understand the concept themselves first<sup>1</sup>.

2. **Students learn more by listening to each other** because it supports diversity<sup>2</sup>.

As students know what their peers know and what they don't know I expect that students will explain the material well!

Please note that the **dates for your peer teaching are preliminary** and we might lag behind (or be ahead of schedule) as the term progresses. If you cannot teach in person on your day, contact BE via email immediately to discuss options.

Please see grading rubric for the peer teaching in the presentation document (posted on Brightspace -> content-> introduction).

- **Paper assignment: 10%** completed in groups **during class time** on Wed June 11. You should read the paper beforehand. During the assignment students will answer questions about the paper in groups. There will be no deferred group paper assignment. If you are sick on the day of the assignment, contact BE via email immediately to discuss options. Deadline extensions are limited due to limited amount of time during summer courses.

- **Artistic Assignment 2% participation grade:** Get creative: write a poem using 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 presenting your work to the class/in the biology hallway. Submission to the Brightspace submission box anytime during the term but no later than Thursday June 26<sup>th</sup> 2025 (day before final exam).

- **Optional EDI (Equity, Diversity, Inclusion) Assignment 3% participation grade:** Identify an injustice or EDI issue related to cell biology and present your review in your preferred mode (video, podcast, poster, ...). Your work must include substantial amount of information and at least two citations from peer reviewed sources. Submission to the Brightspace submission box anytime during the term but no later than Thursday June 26<sup>th</sup> 2025 (day before final exam). Once you submit the final exam will count 37% instead of 40%.

-Students with **accommodations** are encouraged to reach out to BE to discuss options ASAP. Please note: OREM rejects to invigilate online quizzes/exams.

#### **Grade conversion:**

A+ 90-100%; A 85-89.5%; A- 80-84.5%; B+ 77-79.5%; B 73-76.5%; B- 70-72.5%;  
C+ 65-69.5%; C 60-64.5%; D 50-59.5%; F <49.5%

In determining final grades for the course, we 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.

**To pass the course**, students must:

- 1) Write a minimum of three out of six **quizzes**
- 2) Write the **final** exam
- 3) **Peer Teach** (student presentation)
- 4) Demonstrate comprehension of scientific literature by answering questions of the **paper assignment**

*If any of 1 through 4 are not completed, the student will automatically fail the course and receive an "N" ('Incomplete course requirements') on their transcript. 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. *If a student successfully completes 1 through 4, but the overall grade is 49% or lower, they will receive an "F" on their transcript.*

### How to be successful

-Success is when you are happy and learn. I strongly encourage you to **attend (!) lectures, listen, take notes and talk**. Class time is your time and used be used to ask/answer question and for discussions.

-Especially summer courses are intense, and we cover the same material in seven weeks that we usually cover in three months during the fall term. So, staying on top of things is key! It is very important to **keep on track** and to focus on class material.

-If you have **questions**, check the course outline, the class announcements, ask your peers and me!

-Form **study groups** with your peers: 4-5 students in one group are perfect. 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% <sup>3</sup>**. 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.

- |                    |  |
|--------------------|--|
| Tuesday May 13:    | <b>First lecture</b> at 8.30 am in Cun146  |
| Monday May 19:     | Victoria Day, no classes today on campus   |
| Tuesday May 20:    | <b>Quiz 1</b> at 8.30 am in class invigilated on Brightspace,<br>lecture at 8.45 am  |
| Tuesday May 27:    | <b>Quiz 2</b> at 8.30 am in class invigilated on Brightspace,<br>lecture at 8.45 am  |
| Tuesday June 3:    | <b>Quiz 3</b> at 8.30 am in class invigilated on Brightspace,<br>lecture at 8.45 am, |
| Wednesday June 4   | Read the paper for the paper assignment  |
| Tuesday June 10:   | <b>Quiz 4</b> at 8.30 am in class invigilated on Brightspace,<br>lecture at 8.45 am  |
| Wednesday June 11: | <b>Paper assignment</b> , questions answered in groups during class<br>time          |
| Tuesday June 17:   | <b>Quiz 5</b> at 8.30 am in class invigilated on Brightspace,<br>lecture at 8.45 am  |

Tuesday June 24: **Quiz 6** at 8.30 am in class invigilated on Brightspace, lecture at 8.45 am  
Thursday June 26 Submission deadline for Artistic assignment and optional EDI assignment)  
Friday June 27<sup>th</sup>: Last day, **Final exam** at 8.30 am in class invigilated on Brightspace

### **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 CBT (cognitive behavioral therapy) 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!** This will help you achieve your goals and cope with stress. All of us benefit from support during times of struggle.

Easter Egg hunt: Tell me why you are taking this course and where you see yourself professionally in five to ten years. Upload your response on COURSE WEBPAGE (assignment easter egg hunt). Everyone who uploaded their answers no later than June 26, 2025 will get 1% bonus grade.

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.

Please read the appropriate section of the current UVic Academic Calendar regarding your rights and obligations (<https://www.uvic.ca/calendar/>).

You are expected to **observe UVic academic regulations and standards of scholarly integrity** especially with regards to plagiarism and cheating.

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

**I hope that you are enjoying a great summer term with Bio360 Cell Biology!**



## References:

- 1: Wagner and Gansemer-Topf, 2005: Learning by teaching others: a qualitative Study exploring the benefits of Peer teaching; WGU Peer learning: Overview, benefits, and models <https://www.wgu.edu/blog/peer-learning2208.html#close>
- 2: WGU Peer learning: Overview, benefits, and models  
<https://www.wgu.edu/blog/peer-learning2208.html#close>
- 3: Sana et al. 2013, Computers and education 62, 24-31

## UVic support centers:

**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.*

**Computer Help Desk** *If you have any technical issues Brightspace, please contact the computer help desk via email ([helpdesk@uvic.ca](mailto:helpdesk@uvic.ca)) or visit the counter in the CLE building*

**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/>

**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/>

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<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>

**Sexualized Violence Prevention and Response at UVic** *UVic takes sexualized violence seriously, and has raised the bar for what is considered acceptable behaviour. We encourage students to learn more about how the university defines sexualized violence and its overall approach by visiting [www.uvic.ca/svp](http://www.uvic.ca/svp). If you or someone you know has been impacted by sexualized violence and needs information, advice, and/or support please contact the sexualized violence resource office in Equity and Human Rights (EQHR). Whether or not you have been directly impacted, if you want to take part in the important prevention work taking place on campus, you can also reach out: Where: Sexualized violence resource office in EQHR; Sedgewick C119, Phone: [250.721.8021](tel:250.721.8021), Email: [svpcoordinator@uvic.ca](mailto:svpcoordinator@uvic.ca), Web: [www.uvic.ca/svp](http://www.uvic.ca/svp)*

**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/>

**End of course outline**