

BIOL186 Physiology and Cell Biology

Course Outline
Summer 2024

General Course Information

Welcome! In this course, we will focus on functional aspects of organisms, and topics include biochemistry, cellular components, membrane structure and function, energy transduction, DNA replication and gene expression. We will explore plant structure and physiology, including photosynthesis, growth, as well as systems of control and transport. We will also introduce the fundamentals animal physiology, including homeostatic mechanisms, circulation, gas exchange, and the nervous system.

Contact Hours & Delivery of Course Materials

Lectures: Monday, Wednesday & Thursday, 8:30am - 10:20am, Cornett B108

Labs*: Monday and Wednesday, 10:30am (B01) in CUN 004 & CUN 018

**Enrolment in the laboratory section is mandatory*

Intended Learning Outcomes

After completion of this course, you will demonstrate knowledge of:

- the basic molecules of life: lipids, proteins, carbohydrates, DNA
- all the basic components of cells and their functions
- fundamental cellular processes, e.g. transport across membranes, functions of enzymes, osmosis, cellular respiration
- basic plant structure and basic plant physiology, e.g. water transport and photosynthesis
- basic animal structures and basic animal physiology, e.g. thermoregulation and nervous systems
- the essentials of gene transcription and translation
- important laboratory safety practices and procedures
- proper use of standard laboratory equipment and techniques such as pipettes, microscopy, spectrophotometry
- how to collect, analyze and present your own experimental data
- the scientific method and how to think critically about experimental design

Instructors

- Barbara Ehling (Lecture Instructor)
- Kim Curry (Lecture Instructor)
- David Punzalan (Lecture Instructor and Coordinator)
- Alicia Rippington (Laboratory Coordinator)

Queries regarding the Lecture portion should be directed to Dave (davidpunzalan@uvic.ca).
Queries regarding the Laboratory portion should be emailed to Alicia (biologylabs@uvic.ca).

Please include "BIOL 186" in the subject line of all e-mail correspondence
We try to get back to you within 48h

Guiding Philosophy and Practices

Students and instructors share the responsibility of cultivating of a **safe, inclusive, and kind** learning environment. We think that the keys to student success (in the course, and beyond) lies in practicing strong learning habits, and fostering a healthy mind, and healthy relationships. We also believe in having fun.

Prerequisites

Any one of: Biology 11, Biology 12, Biology 150A, Biology 150B, Biology 184, or equivalent, or placement exam. You need not have passed Biology 184 in order to take Biology 186.

Although a course in chemistry is not a prerequisite for Biology 186, such a course at the high school, college or university level is strongly recommended.

Required Materials and Technology

1. This course will require students to meet the UVic minimum technology requirements: <https://www.uvic.ca/systems/status/features/min-tech-requirements.php>
2. The Brightspace (BRS) course website: <https://bright.uvic.ca/d2l/home/353102> will serve as the primary means of sharing learning resources, so please check this page regularly for important information and announcements.
3. Textbook (optional):
Campbell Biology, 3rd Canadian edition, by Urry et al. 2021. Available through the bookstore. OR
OpenStax Biology 2e (<https://openstax.org/details/books/biology-2e>); this textbook can be downloaded for free and accessed electronically using a laptop, desktop, tablet, or smartphone; if you want a printed version, you must purchase one directly from OpenStax.
4. Lecture materials: pre-lecture videos will often be posted on Brightspace, to be watched ahead of time. In-class lectures (slides + audio) audio will be posted, along with electronic (.pdf) versions of the lecture slides.
5. Lab materials: you are required to purchase a subscription to LabFlow, which hosts the online lab manual and online labs. You are also required to have a lab coat, which can be purchased from the UVic bookstore.

Assessment

You will have the opportunity to demonstrate your progress and proficiency through various forms of evaluation, including:

Lecture quizzes	30% (best 5 of 6 x 6% each)
Lecture final exam	30% (cumulative)
Laboratory assessments	40%, made up of:
Integrity Matters	1%
Lab quizzes	4%
Lab Assignments	20%
Final Lab Exam	<u>15%</u>
Total	100%

Lecture quizzes will be 20 minutes long, beginning at 8:30am and immediately followed by a lecture at 8:50am. The Final Exam will be 70 minutes long, beginning at 8:40am.

Lecture quizzes, and Lecture and Lab exams are in-person, closed book, and invigilated.

Students are expected to adhere to the UVic policy on academic integrity:

https://www.uvic.ca/calendar/undergrad/index.php#/policy/Sk_0xsM_V

To pass the course, students must:

- 1) Complete the online Integrity Matters **Lab assignment**
- 2) Write at least 4 of the 6 **Lecture quizzes**
- 3) Write the **Lecture final exam**
- 4) Write the **Lab final exam**
- 5) Meet the minimum **lab** attendance requirement (see details below)
- 6) Score a grade of 20, or greater, points out of a possible 40 (50%) in the **Laboratory component**
- 7) Score a grade of 30, or greater, points out of a possible 60 (50%) in the **Lecture component**

If any of 1 through 5 are not completed, the student will automatically fail the course and receive an "N" ('Incomplete') on their transcript.

If a student successfully completes 1 through 5, but is not successful in either 6 or 7, they will receive an "F" on their transcript.

Policy on missed labs and assignments

Students are required to complete all online labs and attend all of the scheduled face-to-face lab sessions for the entirety of the semester in order to fulfill the requirements of this course. **If you miss, for any reason, more than two of the face-to-face laboratory sessions you will not have completed the course requirements and you will receive an incomplete grade (N) in the course.** Make-up labs will not be available. If you miss a face-to-face lab contact Alicia Rippington (biologylabs@uvic.ca) within 24 hours to discuss options for making up the missed laboratory assignment(s). You will be responsible for all of the lab material you missed and you will be examined on this material. Be sure to connect with a TA and your peers to catch up on what you missed in the lab.

Policy on missed lecture quizzes and exams

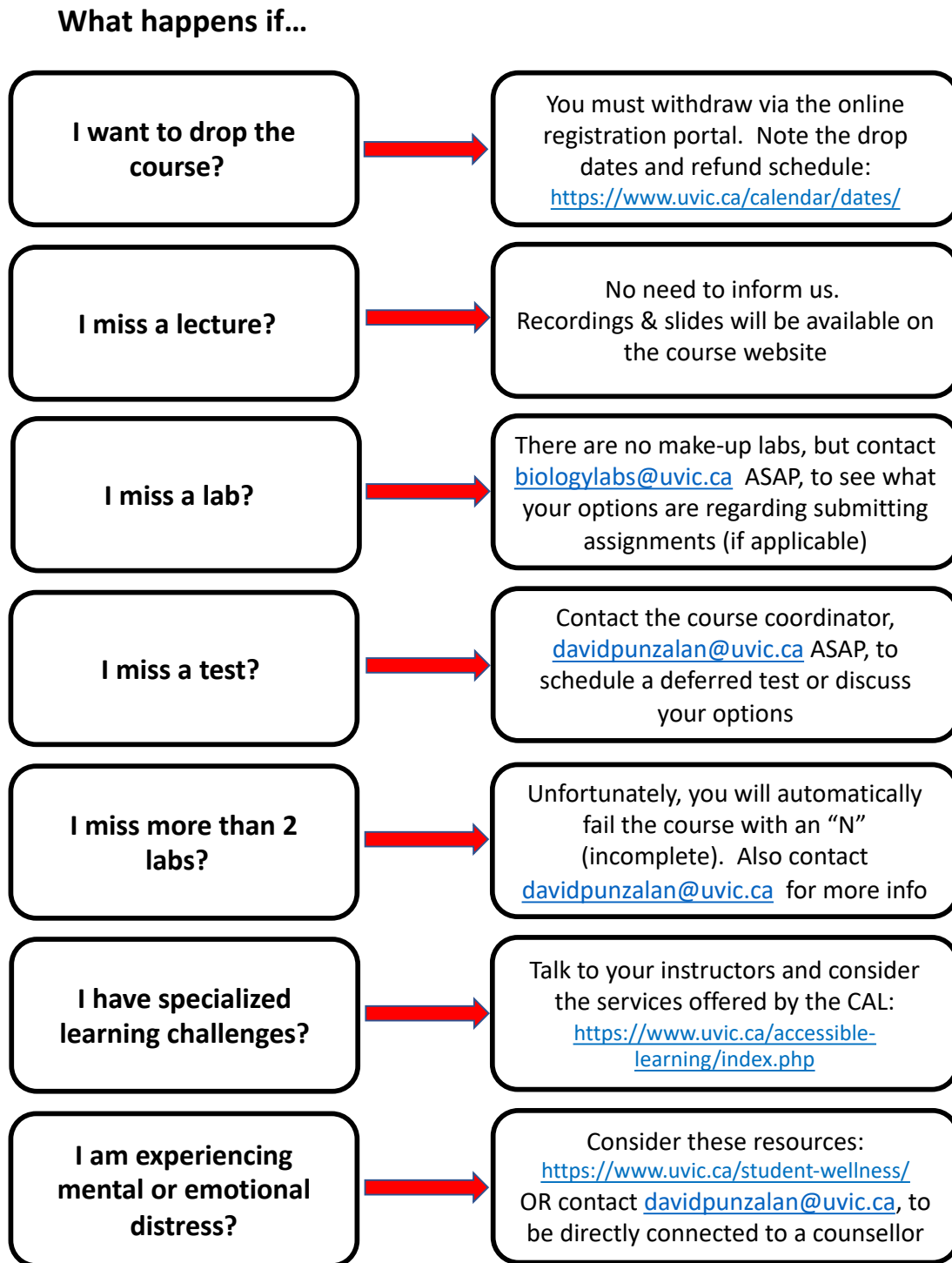
If you must miss a quiz or exam because of course conflict, illness, accident, family affliction, or competition as a UVic athlete, you will not be required to provide a note or other documentation. If you miss one **Lecture Quiz**, that will automatically be the one excluded from the grade calculation. If you miss more than one **Lecture Quiz**, there is no opportunity to defer, though the instructor may opt to combine the value of missed quizzes with the Lecture Final Exam. If you miss the **Lecture Final Exam**, and/or the **Lab Final Exam** you must complete a Request an Academic Concession to write the exam at a later date (<https://www.uvic.ca/students/academics/academic-concessions-accommodations/request-for-academic-concession/index.php>). Travel plans are not a valid reason for missing the Lecture Quizzes or Lecture Final Exam.

Important Course Dates

Monday May 13th, **Lectures begin**
Wednesday May 15th, **Labs begin** online
Thursday May 16th, (8:30am) **Lecture quiz 1**
Monday May 20th, Victoria Day (no class)
Thursday May 23rd, (8:30am) **Lecture quiz 2**
Monday May 27th, **First in-person lab**
Thursday May 30th, (8:30am) **Lecture quiz 3**
Thursday June 6th, (8:30am) **Lecture quiz 4**
Thursday June 13th, (8:30am) **Lecture quiz 5**
Monday June 24th, (10:30am) **Lab final exam**
Thursday June 27th, (8:30am) **Lecture final exam**

Frequently Asked Questions

Detailed policies are outlined in this syllabus, as well as the lab manual—please read those carefully. For ease, a selection of questions and answers are depicted in the graphic, below.



Appendix & Resources

Territory Acknowledgment

The instructors of BIOL184 are grateful to live and work in the unceded territories of the Lekwungen speaking First Nations, and we support the University of Victoria's official territory acknowledgment:

"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."

Code of Conduct, and Commitment to Equity, Diversity and Inclusion (EDI)

All participants of BIOL184 are expected to treat each other with mutual respect. The course team welcomes students of all backgrounds, regardless of nationality, ethnicity, gender, sexual orientation, religion, age, etc.

Accessibility and Special Needs

Students with special needs will be welcomed and accommodated, provided those needs are registered through the Centre for Accessible Learning (<https://uvic.ca/services/cal>; phone: 250-472-4947)

Wellness, Safety, and Support

We encourage students to use the support services to address their needs and these include:

- **Computer Help Desk** provides technical support and can be reached via email at helpdesk@uvic.ca
- **Support Connect** offers short term solution focused counselling, available 24/7 help by phone or online, via a team of counsellors, consultants and life coaches <https://www.uvic.ca/student-wellness/wellness-resources/supportconnect/index.php>
- **Student Wellness Centre** supports students' mental, physical and spiritual health via a team of counsellors, nurses, physicians, spiritual care providers. <https://www.uvic.ca/student-wellness/index.php>
- **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/>
- **Office of Student life** addresses student conduct, first year experience, Student mental health, Sexualized violence awareness <https://www.uvic.ca/services/studentlife/index.php>
- The **Office of the Registrar** helps with academic concession, fee reduction appeals, etc. <https://www.uvic.ca/registrar/students/index.php>
- **Sexualized Violence Prevention and support:** offers information on how to start conversations about consent, support on and off campus. <https://www.uvic.ca/sexualizedviolence/>
- **UVic Bounce** shares stories about resilience and how we stand up again after falling. <https://uvicbounce.ca/>

University Policies

Public Health Policies

All staff and students are expected to abide by the guidelines provided by the University of Victoria (<https://www.uvic.ca/covid19/>).

Academic Integrity

The University of Victoria and the Department of Biology take academic integrity (including plagiarism) as a serious matter. Please read this:

https://www.uvic.ca/calendar/undergrad/index.php#/policy/Sk_0xsM_V

Course Grade and Academic Transcript

Grades for all UVic courses are submitted as percentiles. A student's academic transcript will include the percentile grade and a letter grade plus the class average and the number of students registered in the course at the time of the final exam. Percentiles will be rounded to the nearest whole number; a grade of xx.5 will be rounded up. Percentile grades will be converted to letter grades on the student's academic transcript according to the table given below.

A+	90 – 100%	B+	77 – 79%	C+	65 – 69%
A	85 – 89%	B	73 – 76%	C	60 – 64%
A-	80 – 84%	B-	70 – 72%	D	50 – 59%

**A grade less than 50% is a failing grade and results in an “F” on your transcript.
Failure to complete lab requirements, including missing more than 2 labs will result in an incomplete grade and an “N” on your transcript**