

COURSE SYLLABUS



COURSE TITLE: BIOL-126: Physiological Basis of Life

CLASS SECTION: 01AB

TERM: Winter 2024

COURSE CREDITS: 3

DELIVERY METHOD(S): In-Person

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

Learn more about Camosun's [Territorial Acknowledgement](#).

INSTRUCTOR DETAILS

NAME: Brooke Cameron

EMAIL: cameronb@camosun.ca

OFFICE: F246

HOURS: Monday 3:30pm-4pm, Wednesdays 11am-1:20pm, Thursdays, 3pm-4pm

As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.

CALENDAR DESCRIPTION

The structure and functions of macromolecules, storage of information and replication of DNA as well as the role of DNA in protein synthesis and inheritance are described and related to the functions of whole organisms. Transport mechanisms, basic metabolism and hormonal and nervous regulation of function are explored with examples.

PREREQUISITE(S):

One of:

C in English 12

C in Camosun Alternative

And one of:

C+ in Anatomy and Physiology 12

C+ in Biology 11

C+ in Camosun Alternative

CO-REQUISITE(S):

Not Applicable

EXCLUSION(S):

Not Applicable

COURSE LEARNING OUTCOMES / OBJECTIVES

Upon completion of this course a student will be able to:

1. Classify and describe the unique structure and function of the four groups of macromolecules and discuss how these relate to their properties within living cells.
2. Differentiate among the various transport mechanisms available to mobilize molecules across cell membranes.
3. Name and outline the pathways utilized by cellular respiration and photosynthesis and explain the importance of these processes to living organisms.
4. Describe the basic steps of DNA replication and indicate its role in cell division and inheritance.
5. Demonstrate knowledge of the basic steps of protein synthesis, identifying the roles of DNA, mRNA, tRNA, amino acids and proteins in the processes of transcription and translation.
6. Identify and explain the principles and consequences of the cell cycle, including both mitosis and meiosis.
7. Examine the basic principles of Mendelian genetics and describe how these relate to other topics encompassed in this course.
8. Describe and explain the role of growth regulators in the control of plant growth, development and physiology.
9. Describe and explain the diversity of control mechanisms in animal systems, including the role of the endocrine and nervous systems.
10. Conduct experiment tests and use analytical techniques in the laboratory to demonstrate a few biological properties of macromolecules, cellular respiration, photosynthesis, DNA technology and plant and animal control systems.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

- a. **Lecture PowerPoint slides** will be available on D2L, along with additional resources
 - i. Printing and bringing the slides to each lecture is highly recommended
 - ii. These slides will be the content tested on lecture exams
- b. **BIOL 126 Lab Manual 2024** is required for all lab sessions
 - i. Available for purchase at Campus Bookstore, or download & print on our D2L website
 - ii. Students are expected to pre-read the lab and complete pre-lab questions prior to each lab
 - iii. The lab manual and lab assignments will be the content tested on lab exams
- c. **Microsoft Word and Excel** must be downloaded **PRIOR to first lab together**
 - i. FREE version of Microsoft 365 is available to students: <https://webservices.camosun.ca/o365-opt-in/>
 - ii. Contact IT support if you have issues: <http://camosun.ca/services/its/contact.html>
- d. **Lab coats** must be worn during the laboratory sessions. Please wear one **to our first lab**
 - i. Available for purchase in the Campus Bookstore
- e. Campbell Biology, Canadian Edition, 3rd Ed.* is a helpful textbook, but **will not be heavily used in the course**
 - i. *Note: Campbell Biology, Canadian Edition, 1st or 2nd Ed. or Campbell Biology, US Edition, 8th, 9th, or 10th Ed. are also suitable. Copies available in Campus Bookstore

COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

Lectures: 001AB Mondays 2:00pm-3:20pm F268
 001AB Wednesdays 9:30am-10:50am F266

Labs: 001B Wednesdays 2:30pm-5:20pm F224
 001A Thursdays 6:30pm-9:20pm F224

Week	Dates	Lecture Topic/Activity	Chapters	Lab Topic/Activity
1	08-Jan	Unit 1: Characteristics of Life	1, 4, 5-6	Lab Introductions
	10-Jan			
2	15-Jan	Unit 2: Metabolism	8	Dilutions & Graphing
	17-Jan			
3	22-Jan	Unit 3: Cellular Respiration	9	Lab 1: Standard Curves
	24-Jan			
4	29-Jan	Unit 4: Photosynthesis	10	Lab 2: Enzymes
	31-Jan			
5	05-Feb	Unit 5: Plant Growth Responses	39	Lab 3: Cellular Respiration
	07-Feb	Lecture Exam #1		
6	12-Feb	Unit 6: Membrane Structure & Function	7	Lab 4: Photosynthesis
	14-Feb	Unit 7: Cell Communication	11,6	
7	19-23 Feb	<i>No Lectures or Labs: Reading Week</i>		
8	26-Feb	Unit 8: Mitosis	12	LAB EXAM #1
	28-Feb	Unit 9: Meiosis	13	
9	04-Mar	Unit 10: Genetics	14,15	Lab 5: Plant Hormones Pt 1
	06-Mar			Lab 6: Mitosis and Meiosis
10	11-Mar	Lecture Exam #2		Lab 7: Diffusion & Osmosis
	13-Mar	Unit 10: Continued	14, 15	
11	18-Mar	Unit 11: DNA Replication	16	Lab 5: Plant Hormones Pt 2
	20-Mar			Lab 8: Drosophila Pt 1
12	25-Mar	Unit 12: From Gene to Protein	17	Lab 8: Drosophila Pt 2
	27-Mar			Lab 9: PCR Pt 1
13	01-Apr	<i>Easter Monday- No Lecture</i>	45	Lab 9: PCR Pt 2
	03-Apr	Unit 13: Endocrine System		Lab Exam Review
14	8-Apr	Unit 14: Nervous System	48, 49	LAB EXAM #2
	10-Apr			
	15-23 Apr	Final Exam (Date TBA)		

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines can be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
Lecture Assignments (~5)	5%
Weekly Pre-Lab Quizzes	5%
Weekly Group Lab Assignments (9)	20%
Lecture Exam #1 (February 7 th)	12.5%
Lecture Exam #2 (March 11 th)	12.5%
Lab Exam #1 (February 28 th /29 th)	12.5%
Lab Exam #2 (April 10 th /11 th)	12.5%
Final Lecture Exam	20%
TOTAL	100%

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information.
<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

Lecture Assignments (5%)

Throughout the course there will be in-class and handout lecture assignments that will engage students with the course content and test their understanding and communication skills. In-class assignments are typically completed in groups while handout assignments are to be done individually and are due the following week.

Weekly Pre-Lab Quizzes (5%)

Each week, students will need to complete a pre-lab quiz via D2L prior to the lab itself to demonstrate that they have read and understood the lab procedures and content. Quizzes will be available one week prior to the lab, are open-book, and are due at start of lab time. No late submissions are accepted.

Weekly Lab Assignments (20%)

Weekly group lab assignments will be posted on D2L the week of the lab and are due one week later via the D2L Assignment tab. Lab assignments must be completed and submitted in lab groups (3-4) and one grade will be provided. Assignments must be submitted on time for prompt grading and return (late work is not accepted).

Exams (70%)

Aside from the final exam, all exams will take place during regular lecture and lab hours and are non-cumulative. Lecture exams are based on PowerPoint slides, while lab exams are based on Lab Manual and lab assignments (calculators are required for lab exams). All exams are closed-book and the use of phones, smart watches, or other electronic devices during exams is NOT permitted. A missed exam will result in a grade of zero. NOTE: DO NOT book travel before learning the final exam schedule.

COURSE GUIDELINES & EXPECTATIONS

Lecture Attendance

Lecture attendance is expected for students to do well in this course. Arriving on-time and with a copy of the PowerPoint slides is crucial for success. Reviewing the available resources to prepare is highly encouraged. If a lecture is missed, students must check D2L and the course outline to see what material must be reviewed.

Lab Attendance

Lab attendance is mandatory (no more than 4 labs can be missed before a student will be given a failing grade in the course, see School Information below). A missed lab typically results in a missed opportunity to submit the associated lab assignment with peers. Arriving on-time having pre-read the lab manual is crucial for individual and group success.

Lab Assignments

Lab assignments will be submitted as a group and as such it is important that good communication and collaboration takes place in and out of the lab. If a student did not participate in the lab or the assignment itself, their name should not be on the assignment. Any group conflicts should be brought to the attention of the instructor as soon as possible.

Study Habits

This course is content-heavy and students will need to stay on top of the material if they are to do well. Visiting office hours and/or the science help centre (<https://camosun.ca/services/academic-supports/help-centres/science-help-centre>) are highly encouraged, as is the formation of study groups to review material with peers.

SCHOOL OR DEPARTMENTAL INFORMATION

Laboratory Attendance Policy

To pass the course, students are required to meet the minimum in-person lab attendance, participation, and completion requirements. Students who will miss a laboratory session have an obligation to seek out concessions directly from their instructor BEFORE the lab period occurs. If a student misses a total of four (4) or more labs for any reason, they will be unable to meet the learning outcomes for the class and will receive a failing grade (F) in the entire course, regardless of marks received on graded lab and lecture components. Please note that if you are suffering from a serious medical illness that prevents you from participating in this course, Camosun College has a Compassionate Medical Withdrawal Policy (<https://camosun.ca/services/forms#medical>)

Common Challenges

In this science-based course, many students struggle with the amount of content covered. When completing assignments, cheating and plagiarism are often more likely to occur as students lack the confidence to complete their work on their own and seek outside support. The consequences for cheating and plagiarism are outlined by Camosun College policies (see <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf>). Please reach out if you need support BEFORE it becomes an academic integrity issue. We are here to ensure you understand the rules and regulations of the college.

STUDENT RESPONSIBILITY

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies;

demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

SUPPORTS AND SERVICES FOR STUDENTS

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Academic Advising	http://camosun.ca/advising
Accessible Learning	http://camosun.ca/accessible-learning
Counselling	http://camosun.ca/counselling
Career Services	http://camosun.ca/coop
Financial Aid and Awards	http://camosun.ca/financialaid
Help Centres (Math/English/Science)	http://camosun.ca/help-centres
Indigenous Student Support	http://camosun.ca/indigenous
International Student Support	http://camosun.ca/international/
Learning Skills	http://camosun.ca/learningskills
Library	http://camosun.ca/services/library/
Office of Student Support	http://camosun.ca/oss
Ombudsperson	http://camosun.ca/ombuds
Registration	http://camosun.ca/registration
Technology Support	http://camosun.ca/its
Writing Centre	http://camosun.ca/writing-centre

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course

instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the "Attendance" section under "Registration Policies and Procedures" (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun's Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them

understand what supports are available and their options for next steps. The Office of Student Support respects a student's right to choose what is right for them. For more information see Camosun's Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and camosun.ca/sexual-violence. To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-3703841

Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College's Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

Changes to this syllabus: Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.