

COURSE SYLLABUS



COURSE TITLE: BIOL-126: Physiological Basis of Life

CLASS SECTION: 01AB

TERM: Winter 2023

COURSE CREDITS: 3

DELIVERY METHOD(S): In-person lecture and lab

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](#).

For COVID-19 information please visit <https://camosun.ca/about/covid-19-updates> (note - legacy page link works too: <https://legacy.camosun.ca/covid19/index.html>)

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 explanation in advance, you will be removed from the course and the space offered to the next waitlisted student.

INSTRUCTOR DETAILS

NAME: Brooke Cameron

EMAIL: cameronb@camosun.ca

OFFICE: F244

HOURS: Mondays, Tuesdays, and Thursdays from 3:00pm-4:20pm, or by appointment

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 Biology 12
- 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 2023** is required for all lab sessions
 - i. Available for purchase at Campus Bookstore, or available for download & print on our D2L website
 - ii. Students are expected to pre-read the lab and complete any 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>
- a) **Lab coats** must be worn during the laboratory sessions. Please wear one **to our first lab**
 - i. Available for rental or purchase in the Campus Bookstore
- b) 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 Tuesdays 1:30pm-2:50pm F268
001AB Fridays 10:30am-11:50am F268

Labs: 001A Wednesday 9:30am-12:20pm F224
001B Wednesday 1:30pm-4:20pm F224

Week	Dates	Lecture Topic/Activity	Chapters	Lab Topic/Activity
1	10-Jan	Course Introduction	1, 4	<i>No Labs First Week (Get Lab Coats and Microsoft!)</i>
	13-Jan	Unit 1: Characteristics of Life		
2	17-Jan	Unit 1: Continued	5-6	Lab Introductions
	20-Jan	Unit 2: Metabolism	8	
3	24-Jan	Unit 3: Cellular Respiration	9	Lab 1: Dilutions
	27-Jan			
4	31-Jan	Unit 4: Photosynthesis	10	Lab 2: Enzymes
	03-Feb			
5	07-Feb	Unit 5: Plant Growth Responses	39	Lab 3: Cellular Respiration Lab 4: Photosynthesis Pt 1
	10-Feb	Lecture Exam #1 (12.5%)		
6	14-Feb	Unit 6: Membrane Structure & Function	7	Lab 4: Photosynthesis Pt 2 Lab Exam Review
	17-Feb	Unit 7: Cell Communication	11,6	
7	20-24 Feb	<i>No Lectures or Labs: Reading Week</i>		
8	28-Feb	Unit 8: Mitosis	12	Lab Exam #1
	03-Mar	Unit 9: Meiosis	13	
9	07-Mar	Unit 10: Genetics	14,15	Lab 5- Plant Hormones Pt 1 Lab 6- Mitosis and Meiosis
	10-Mar			
10	14-Mar	Lecture Exam #2 (12.5%)		Lab 7- Diffusion & Osmosis
	17-Mar	Unit 10: Genetics	14, 15	
11	21-Mar	Unit 11: DNA Replication	16	Lab 5- Plant Hormones Pt 2 Lab 8: Drosophila Pt 1
	24-Mar			
12	29-Mar	Unit 12: From Gene to Protein	17	Lab 8- Drosophila Pt 2 Lab 9: PCR Pt 1
	01-Apr			
13	04-Apr	Unit 13: Endocrine System	45	Lab 9- PCR Pt 2 Lab Exam Review
	07-Apr	<i>Good Friday- No Lecture</i>		
14	11-Apr	Unit 14: Nervous System	48, 49	LAB EXAM #2
	14-Apr	Snap Presentations		
	April 17-25	Final Exam (20%, 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

ASSESSMENT ITEM	WEIGHTING (%)
Lecture Exam #1 (Week 5: Friday, February 10 th)	12.5
Lab Exam #1 (Week 8: Wednesday, March 1 st)	10
Lecture Exam #2 (Week 10: Tuesday, March 14 th)	12.5
Lab Exam #2 (Week 14: Wednesday, April 12 th)	10
Lab Assignments (Weekly, 9)	20
Pre-lab Questions and Preparation (Weekly)	2.5
Lecture Assignments (~3-5 throughout term)	5
In-lab/in-lecture activity participation	2.5
Snap Presentations	5
Final Exam (April 17-25)	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>

Exams (65%)

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 slide material, while lab exams are based on Lab Manual and lab assignments. All exams are closed-book and the use of phones, smart watches, or other electronic devices during exams is NOT permitted. NOTE: DO NOT book travel before learning the final exam schedule.

Lab Assignments (20%)

Weekly lab assignments will be posted on D2L the week of the lab and are due one week later via the D2L dropbox. 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).

Pre-Lab (2.5%)

Many labs will require pre-lab preparations, typically in the form of a D2L quiz to be completed individually PRIOR to arriving to the lab itself to ensure students have read the lab manual prior to the lab session.

Lecture Assignments (5%)

Throughout the term, lecture assignments will be posted on D2L and hard copies handed out in lecture. assignments are due within one week and will be completed individually and outside of class time. Submissions must be neat and on time for prompt grading and return (late work is not accepted).

In-lab/in-lecture Activity Participation (2.5%)

Involvement during laboratory sessions and group projects is essential for success for all group members, so attendance and co-operation will be graded accordingly.

Snap Presentations

Short presentations are short in-class presentations completed in groups on a topic selected earlier in the year in the field of endocrine and nervous system research. More details to come earlier in term.

COURSE GUIDELINES & EXPECTATIONS

Science Help Center

If a student is ever confused or uncertain about a concept or assignment, the science help center offers free tutoring and support to all Camosun students. View their hours via <https://camosun.ca/services/academic-supports/help-centres/science-help-centre>

Weekly Habits

This course covers a high volume of material, so attending each lecture and lab is imperative for success. To do well, time management is key. Come to each lecture and lab prepared, having pre-read the material and reviewed any relevant videos or chapters. Regularly check D2L for updates and communications. Before anything else, mark your calendars with important dates and deadlines listed in this outline and look ahead to what is due as you progress. These habits will help you throughout your academic career.

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. I'm here to ensure you understand the rules and regulations of the college.

Office Hours

Students are *highly* encouraged and invited to visit office hours throughout the term. Office hours are a great chance to check in, review assignment details, tests, and content, get time management strategies and study tips, or share interesting new articles and pictures. Students who check-in typically gain accountability with the course and their grade demonstrates this. Don't be shy, take advantage of your resources and come say hi.

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.