



**CAMOSUN COLLEGE**  
**School of Arts & Science**  
**Department of Biology**

**BIOL-126-002**  
**Physiological Basis of Life**  
**Winter 2020**

## COURSE OUTLINE

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The course description is online @ <http://camosun.ca/learn/calendar/current/web/biol.html>

☐ Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

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### 1. Instructor Information

(a) Instructor	Sarah Cockburn
(b) Office hours	Mon 2-3:20, Tues 1:30-3, Wed 10:30-11:20
(c) Location	F352
(d) Phone	250-370-3925
(e) E-mail	cockburns@camosun.bc.ca
(f) Website	<a href="http://online.camosun.ca/">http://online.camosun.ca/</a> (D2L entry site)

**IMPORTANT NOTE:** If my office hours do not match up with your schedule, this should not dissuade you from coming to see me! If you would like to meet *not* during my scheduled office hours, simply arrange an appointment by e-mail (cockburns@camosun.bc.ca) and I will be very pleased to meet with you at a mutually convenient time. ☺

### 2. Intended Learning Outcomes

Upon completion of this course the 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.

### 3.Required Materials

a. Texts: Recommended material (not required) Campbell Biology, Canadian Edition. 2018. Biology 2nd ed., Pearson Education, Inc., San Francisco, CA.

\*Note: Campbell Biology 1st Canadian Edition, Campbell Biology 10th, 9th and 8th US edition are also okay to use as a textbook

b. Other – Lab manual will be posted on D2L

### 4.Course Content and Schedule

(Please see last page for detailed schedule)

Class Schedule:

Lectures: Monday (F268) 12:30 PM –1:50 PM  
Wednesday (F268) 11:30 AM –12:50 PM

Lab Section A: Wednesday (F224) 1:30 PM – 4:20 PM  
Lab Section B: Thursday (F224) 1:30 PM – 4:20 PM

### 5.Basis of Student Assessment (Weighting)

Midterm I	12.5%
Midterm II	12.5%
Lab Exam I	12.5%
Lab Exam II	12.5%
Final Lecture Exam	20%
Assignments/labs/quizzes	
Lecture and Lab assignments	22%
D2L quizzes	3%
In class assignments/activities/quizzes	5%

Midterms and lab exams will be unit exams. The lecture final exam will be cumulative. Please make sure to bring a pen and pencil and a calculator to exams.

### 6.Grading System

Standard Grading System (GPA)

Competency Based Grading System

### 7. Recommended Materials to Assist Students to Succeed Throughout the Course

<https://online.camosun.ca/d2l/home>

## 8. College Supports, Services and Policies



### Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

### College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

### College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

#### A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

##### 1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

##### 2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.

NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.
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## B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://camosun.ca/about/policies/index.html> for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

## Plagiarism

Plagiarizing is appropriating the work of another or parts or passages of another's writing (including the ideas or language) and passing them off as the product of one's own mind or manual skill. **Plagiarism will not be tolerated.** All written material must be done individually. This includes **lab data and graphs**; although some lab work will be done in groups, material submitted for grading must be processed and submitted independently. **Plagiarism, including the copying of any part of assignments or lab assignments, is a serious offence and is considered to be academic misconduct.**

## Cheating

A student caught cheating on an exam will forfeit all credit for that exam and perhaps for the course. Cheating is a serious offence and is considered to be academic misconduct. **Cheating includes, but is not limited to, using unauthorized materials in a quiz/exam and providing information to another person regarding exam content.**

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> and <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.1.pdf> and may be severe.

## ADDITIONAL INFORMATION

No programmable devices are allowed in exams (cell phones, apple watches etc.).

## Missed Exams

**Without exception,** all lecture and lab exams must be written at the scheduled times. However, it is understood that emergency circumstances occur (e.g. illness or emergency in the immediate family); for such circumstances accommodation may be offered at the discretion of the instructor, provided (a) the instructor is notified in advance of the exam (**not after**) and (b) the student provides **documented evidence** of the circumstance (i.e. medical certificate). The accommodation will be in the form of adjusting the weighting of the final exam to make up the missing marks. In such cases, the final exam will include extra questions to examine knowledge of the untested subject matter.

**\*\*HOLIDAYS OR SCHEDULED FLIGHTS ARE NOT CONSIDERED TO BE EMERGENCIES \*\*\*\***

**Late Penalties**

Assignments are due at the **beginning** of the class period on the due date. Assignments not handed in at the beginning of class will be considered late, for which there is a 10% penalty/day. The format is expected to be professional, i.e. a neat, legible, clean copy. "Rough" drafts risk rejection and a subsequent late penalty. If the assignment is more than one page, separate pages must be stapled before you come to class. Electronic submissions will not be accepted unless otherwise stated by the instructor.

**Note:** There is the option of 1 free late assignment. There will be no penalty provided the assignment is received prior to it being marked and returned to the class. Any assignment received after its return to the rest of the class will be marked but will not receive credit.

**Lecture Attendance**

Attending lectures will be an important part of succeeding in this course. From time to time there will be quizzes and other in-class activities for marks that will also help you and I determine how you are doing with the material. If you know that there is a lecture that you will miss where an announced activity will take place, you must let me know ahead of time and have a legitimate reason to miss it (e.g. an emergency or an illness with documented evidence). The lecture PowerPoint presentations will be posted on <http://online.camosun.ca> but there will be much more information provided during lecture time that you won't want to miss!

**Laboratory Attendance**

The laboratory experience is critical to the course objectives and so attendance throughout the entire laboratory session is mandatory and will be noted. **Missing labs without a valid excuse may result in a deduction of 1% per lab missed from the final grade.** Lateness in arriving, failure to attend the lab or leaving the lab before its scheduled finish time will result in forfeiting credit for that lab, including any written assignments.

Arriving more than **5 minutes** after the start of the lab time is considered late and will only be acceptable one time or with a legitimate excuse.

If a lab session is missed, another student's data **may not** be used to complete a lab assignment for credit. Exceptions can be made **at the instructor's discretion** in legitimate cases of emergency (e.g. illness); in such cases the instructor must receive **advance notification** and **documented evidence** of the situation (e.g. medical certificate) and grant approval for any accommodation.

The schedule, which follows, is an attempt to outline the weekly activities of the class. It is subject to change or modification as the need arises

<b>Week</b>	<b>Lecture Topic</b>	<b>Ch.</b>	<b>Laboratory Exercise</b>
1- Jan 6-10	Introduction & Characteristics of Life	1,4,5,6	Lab Introduction and dilution problem sets
2- Jan 13-17	Metabolism	8	Lab 1: Concentration, Standard Curve
3- Jan 20-24	Glycolysis & Respiration	9	Lab 2: Enzyme Activity
4- Jan 27-31	Respiration cont. Photosynthesis	9 10	Lab 3: Cellular Respiration
5- Feb 3-7	Photosynthesis/Plant Growth <b>Midterm Feb 5</b>	10,39	Lab 4: Photosynthesis
6- Feb 10-14	Membrane structure and Function Intracellular Communication	7, 11	<b>Lab Exam 1</b>
7- Feb 17-21 College closed	<b>College is closed Reading Week</b>		<b>College is closed Reading Week</b>
8- Feb 24-28	Mitosis & Cell Cycle Meiosis	12	Lab 5: Plant Hormones (Part 1) Lab 6: Mitosis and Meiosis
9- March 2-6	Meiosis Cont. Mendel and the gene Idea	13 14	Lab 7: Diffusion and Osmosis
10- March 9-13	Inheritance <b>Midterm March 11</b>	15	Lab 5 Plant Hormones (Part 2) Lab 8: Fruit Fly (Part 1)
11- March 16-20	DNA Replication	16	Lab 8: Fruit Fly (Part 2) DNA Lab (Part 1)
12- March 23-27	From Gene to Protein	17	Lab 9: DNA Lab (Part 2)
13- March 30-3	Endocrine System	45	<b>Lab Exam 2</b>
14- April 6-9 College closed Friday April 10 - Good Friday	Neurons and Nervous System	48,49	<b>No Labs</b>