



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

**BIOL-126-003**  
**Physiological Basis of Life**  
**Winter 2018**  
**COURSE OUTLINE**

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

Ω 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	Dominic Bergeron, PhD		
(b) Office hours	M: 9:30-11:20; Tu: 12:00-13:20; W: 12:30-13:20		
(c) Location	F 248 D		
(d) Phone	(250) 370-3432	Alternative:	NA
(e) E-mail	BergeronD@camosun.ca		
(f) Website	<a href="https://www.youtube.com/user/MachineBiological">https://www.youtube.com/user/MachineBiological</a>		

### 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) Textbook: Biology – OpenStax (FREE!) <https://openstax.org/details/books/biology>
- (b) Lab Manual: The lab manual is posted on D2L and can be downloaded free of charge
- (c) Other resources, links to videos, articles etc. will be available on D2L

#### 4. Course Content and Schedule

Week	Lecture Topic	Laboratory Exercise
1- Jan 8-12	Introduction & Characteristics of Life	Lab Introduction
2- Jan 15-19	Metabolism	Lab 1: Concentration, Standard Curve
3- Jan 22-26	Glycolysis & Respiration	Lab 2: Enzyme Activity
4- Jan 29-Feb 2	Respiration cont. Photosynthesis	Lab 3: Cellular Respiration
5- Feb 5-9	Photosynthesis/Plant Growth <b>Midterm 1 Feb 8</b>	Lab 4: Fermentation
6- Feb 12-16	<b><u>No Classes: Reading Break</u></b>	<b><u>No Lab: Reading Break</u></b>
7- Feb 19-23	Membrane structure and Function Intracellular Communication	Lab 5: Photosynthesis
8- Feb 26-March 2	Mitosis & Cell Cycle	<b>Take Home Lab Exam #1</b>
9- March 5-9	Meiosis Mendel and the gene Idea	Lab 6: Diffusion and Osmosis
10- March 12-16	Inheritance <b>Midterm 2 (Mar 15)</b>	Lab 7: Mitosis & Meiosis
11- March 19-23	DNA Replication	Lab 8: Fruit Fly (Part 1)
12- March 26-29 <b><u>College closed March 30</u></b> <b><u>Good Friday</u></b>	From Gene to Protein	Lab 8 and 9: Fruit Fly (Part 2) DNA Lab (Part 1)
13- April 3-6 <b><u>College closed April 2</u></b> <b><u>Easter Monday</u></b>	Endocrine System	Lab 9: DNA Lab (Part 2)
14- April 9-13	Neurons and Nervous System	<b>Take Home Lab Exam #2</b>

## 5. Basis of Student Assessment (Weighting)

- (a) Assignments, Quizzes, Lab Reports: 20%
- (b) Exams
  - a. Midterm 1: 12.5% (Feb 8<sup>th</sup>)
  - b. Midterm 2: 12.5% (March 15<sup>th</sup>)
  - c. Final exam: 30% (To be scheduled)
  - d. Take Home Lab exam 1: 12.5% (March 1<sup>st</sup> – 7<sup>th</sup>)
  - e. Take Home Lab exam 2: 12.5% (April 12<sup>th</sup> – 18<sup>th</sup>)

**IMPORTANT NOTICE:** Many assignments, lab exams, lab reports, etc. are **REQUIRED** to be uploaded to D2L's DROPBOX. This DROPBOX is set to open and to close at a specific time (Date). A penalty will be applied for any documents uploaded past the limit. If you run into a problem while uploading send an email ASAP and I will look into it. Do not let me know after the fact, be pro-active!

Time over preset limit	Penalty
15 minutes – 60 minutes	15%
61 minutes – 120 minutes	30%
120 minutes – 1 day (24 hours)	50%
Over 24 hrs	The item will not be marked and the result will be "0"

## 6. Grading System

- Standard Grading System (GPA)
- Competency Based Grading System

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

A list of resources will be posted on D2L

## 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.

## 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.
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