



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

**BIOL-126-001**  
**Physiological Basis of Life**  
**Fall 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**

<b>(a) Instructor</b>	W. Donald MacRae
<b>(b) Office hours</b>	M (10:00-11:00); Tu (10:30-11:30 and 1:00-2:00), W & Th (12:30-1:30)
<b>(c) Location</b>	F346A
<b>(d) Phone</b>	250-370-3437
<b>(e) E-mail</b>	dmacrae@camosun.bc.ca

**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) Any 1<sup>st</sup> year majors Biology textbook will be a helpful learning aid. A version of Openstax Biology 2e that contains only those sections directly applicable to this course will be available as a free download from the course D2L site.

(b) The Biology 126 Fall 2018 Lab manual is required and will be posted on D2L for you to print.

### 4. Course Content and Schedule

Lectures: Mon (Y211) 8:30 PM –9:50 PM  
 Thurs (Y211) 8:30 PM –9:50 PM

Lab Section A: Tues (F224) 2:30 PM – 5:20 PM  
 Lab Section B: Wed (F224) 9:30 AM – 12:20 PM

Week	Dates	Lecture topics	Lab Activities
1	Sept 4-6	1. Macromolecules	No Labs (Mon, Sept 3 is Labour Day) – classes meet
2	Sept 10-13	2. Biological membranes 3. Metabolism	Lab 1: Concentration, standard curve
3	Sept 17-20	4. Cellular Respiration	Lab 2: Enzyme Activity
4	Sept 24-27	5. Photosynthesis	Lab 3: Cellular Respiration
5	Oct 1-4	6. Protein synthesis	Lab 4: Plant Hormones
6	Oct 9-11	7. DNA replication, mitosis and meiosis <b>Midterm I (Oct 11)</b>	short lab (Mon, Oct 8 is Thanksgiving) finish auxin expt
7	Oct 15-18	8. Genetics	Lab 5: Photosynthesis + finish apical dominance expt
8	Oct 22-25		<b>Lab Exam I</b>
9	Oct 29-Nov 1	9. Plant growth and development	Lab 6: Diffusion and osmosis
10	Nov 5-8		Lab 7: Mitosis and Meiosis; Lab 8: <i>Drosophila</i> - 1
11	Nov 13-15	10. Neuromuscular control <b>Midterm II (Nov 15)</b>	Short lab (Mon, Nov 12 College Closed) <i>Drosophila</i> - 2
12	Nov 19-22		Lab 8: <i>Drosophila</i> -2; Lab 9: PCR - 1
13	Nov 26-29	11. Endocrine control	Lab 9: PCR - 2
14	Dec 3-6		<b>Lab Exam II</b>

## 5. Basis of Student Assessment (Weighting)

Lab Assignments	10%
Lecture Assignments	10%
Lab Exam I	12.5%
Lab Exam II	12.5%
Midterm I	12.5%
Midterm II	12.5%
Final Lecture Exam	30%

Midterms and lab exams will be unit exams. The lecture final exam will be cumulative.

### Final Grade Calculator (Unofficial):

Choose which of these statements that will apply to you this semester, add their values together and use the Standard Grading System to calculate your expected grade.

Read ahead and review material on same day it is covered ..... 3  
or... Keep up with reading and review lectures at the end of the week ..... 2  
or ...Skip reading until in the mood and wait until a few days before test to review ..... 0

Attend lectures and spend 1 hour studying for each 1 hour of lecture ..... 3  
or...Skip lectures and spend 3 hours studying for each hour of lecture ..... 3  
or ...Skip lectures and spend less than 1 hr studying for each 1 hr lecture skipped ..... 0

Use active study methods (e.g. explain concepts to study partners) and avoid distractions . 2  
or...Study by reading and hoping you remember later..... 1  
or...Study while texting, cooking, watching TV or dealing with social disharmony ..... 0

Set up a system in which you set goals and reward yourself for achieving them ..... 1  
or...Avoid feeling guilty for not studying by spending all free time near an open book ..... 0

Look for aspects of the course that are interesting to you or apply to your life ..... 1  
or...Remind yourself that you need a certain grade in this course before you can get  
into another course that you need a certain grade in to get into another course that  
you need a certain grade in to get into another course that you need a certain grade  
in (etc, etc) ..... 0

Get regular exercise and sleep, especially before tests ..... 1  
or...Don't make time for exercise and stay up late studying before tests ..... 0

Feel good about the things you have to be grateful for ..... 1  
or...dwell on the things you don't have but wish you did ..... 0

## 6. Grading System

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

## 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/> Assistance with study skills is available in room 143 of the Lansdowne Library – further details at <http://camosun.ca/services/writing-centre/learning-skills.html>

### 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 grading system is used in Biology 126:

**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

**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.