



School of Arts & Science  
BIOLOGY DEPARTMENT  
BIOLOGY 126

## *Physiological Basis of Life*

Winter 2012 (Jan. - May)

### COURSE OUTLINE

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

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#### 1. Instructor Information

Instructor: **Dominic Bergeron, PhD**  
Office Hours: **M, W: 2:30-4:20 ; F: 10:30-11:20**  
Location: Fisher 342 B  
Phone: 250-370-3465  
Email: [BergeronD@camosun.ca](mailto:BergeronD@camosun.ca)  
D2L Website: <http://online.camosun.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

- 1) Textbook: Campbell, N. A. & J. B. Reece. 2011. Biology, 9<sup>th</sup> ed., Pearson Education, Inc., San Francisco, CA.
- 2) Camosun College Biology Faculty. Winter, 2012. Biology 126 Lab Manual, Camosun College, Victoria, B.C.

### 4. Course Content and Schedule

#### Lecture

Tuesday	12:30 – 1:20	F 338
Wednesday & Friday	12:30 – 1:20	F200

#### Lab

Section 001A Monday	17:30 - 20:20	F244
Section 001B Thursday	9:30 – 12:20	F224

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.

Date	Lecture Topic	Ch.	Laboratory Exercise
Jan 9 –Jan 13	Introduction & Characteristics of Life	8	Lab Introduction
Jan 16 –Jan 20	Metabolism - Introductory	1,8,9	1. Tools for Scientific Discovery
Jan 23 – Jan 27	Glycolysis & Respiration	9	2. Enzyme Activity
Jan 30 – Feb 3	An End to Respiration Photosynthesis	9 10	3. Respiration
Feb 6 – Feb 10	Photosynthesis The Cell Membrane	10 7	4. Fermentation & Cellular Respiration
Feb 13 – Feb 17	The Cell Membrane <b>Midterm Lecture Exam 1</b>	7	<b>Lab cancelled for reading break</b>
<b>Feb 16 &amp; 17 – College Closed for Reading Break</b>			
Feb 20 – Feb 24	Intracellular Communication	11	5. Photosynthesis
Feb 27 – Mar 2	Mitosis & Cell Cycle	12	<b>Midterm Lab Exam</b>
Mar 5 – Mar 9	Mitosis Meiosis	12 13	6. Movement of Molecules
Mar 12 – Mar 16	Sources of Variation <b>Midterm Lecture Exam 2</b>	14 15	7. Mitosis & Meiosis 8. Fruit Fly Eye Pigments (Part 1)
Mar 19 – Mar 23	Inheritance DNA Replication	16	8. Fruit Fly eye Pigments (Part 2)
Mar 26 –Mar 30	DNA Replication Protein Synthesis	16 17	9. DNA Lab (Part 1)
Apr 2 –Apr 6	Protein Synthesis	17	9. DNA Lab (Part 2)
<b>April 6 – College closed for Good Friday</b>			
<b>April 9 – College closed for Easter Monday</b>			
Apr 9 – Apr 13	Regulation of Gene Expression	18	<b>Lab cancelled for holiday</b>

## 5. Basis of Student Assessment (Weighting)

Lab Exam I	12.5%	Feb. 28
Lab Exam II	12.5%	To be announced
Midterm I	12.5%	Week of Feb. 13
Midterm II	12.5%	Week of Mar. 12
Final Lecture Exam	30%	During final exam period
Assignments/labs/quizzes	20%	

\*\*\* Lab exams will be unit exams. Lecture exams will be cumulative.

## 6. Grading System

### 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	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

### 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 E-1.5 at [camosun.ca](http://camosun.ca) 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, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 <sup>rd</sup> course attempt or at the point of course completion.)
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.

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

### LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist you throughout your learning. This information is available in the College calendar, at Student Services, or the College web site at [camosun.ca](http://camosun.ca).

### STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services, and the College web site in the Policy Section.

#### 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 lab work is 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-&-support/e-2.5.pdf> and <http://camosun.ca/about/policies/education-academic/e-2-student-services-&-support/e-2.5.1.pdf>) and may be severe.

### ADDITIONAL INFORMATION

#### Missed Exams

**Without exception**, all lecture and lab exams must be written at the scheduled times. **Under no circumstances will a make-up exam be administered.** 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). **Without exception**, 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 \*\*\*\***

Be sure not to plan airline flights for the end of semester until the final exam schedules are finalized and posted.

### **Late Penalties**

All assignments must be handed in on the scheduled date **before 5:00 PM**. Late assignments will be graded but marks equivalent to 15% of the total value of the assignment will be deducted per day past the deadline.

### **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. 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. 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. In cases when a lab is done over two weeks, missing one of the weeks without instructor approval will result in a 50% reduction in the grade for any assignment associated with that lab.

### **Student Responsibilities**

1. It is believed that attending and actively engaging in lecture times is in the best interests of student success. Should it be necessary to miss a lecture, however, it is the student's responsibility to catch up on anything that may have been missed (e.g. important announcement or assignments).
2. Students are expected to hand in any required assignments or reports on time. Late assignments will be penalized (see above).
3. Unless otherwise indicated by the instructor, all written work (including numerical entries in data tables) is to be submitted in word processed form. Typical exceptions include calculations (when required) or graphs, which may be submitted handwritten or hand-drawn. Electronic submissions (e.g. as e-mail attachments) will not be accepted, except where specified **by the instructor**. Failure to comply will result in late penalties (as indicated).
4. Any evaluation of work for in-class/lab assignments, reports and/or participation will not be given if a student is not present for any reason.
5. Students are expected to work independently on assignments and reports unless instructed that the evaluation is based on group effort and evaluation.
6. Students must know and follow all Safety Rules and Procedures. Students must sign the Safety Contract before participating in any laboratory activity. Failure to follow the Safety Rules and Procedures will result in penalties at the discretion of the instructor.