



School of Arts & Science
BIOLOGY DEPARTMENT
BIOLOGY 126
Physiological Basis of Life
Fall 2009 (Sep-Dec)

COURSE OUTLINE

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

1. Instructor Information

(a)	Instructor:	Rosemary Mason		
(b)	Office Hours:	T.B.A.		
(c)	Location:	Ewing 236		
(d)	Phone:	250-370-3301	Alternative Phone:	n/a
(e)	Email:	masonr@camosun.bc.ca		
(f)	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. 2007. Biology, 8th ed., Pearson Education, Inc., San Francisco, CA.
- 2) Camosun College Biology Faculty. Fall 2009. Biology 126 Lab Manual, Camosun College, Victoria, B.C.

4. Course Content and Schedule

Lecture

Tues., Thurs.	1:30 – 2:20	F202
Wed.	1:30 – 2:20	F200

Lab

Section 001A	Thurs.	2:30 – 5:20	F224
Section 001B	Mon.	2:30 – 5:20	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
Sept. 8 - 11	Introduction & Characteristics of Life	8	No lab
Sept. 14 - 18	Metabolism - Introductory	1,8,9	Tools for Scientific Discovery
Sept. 21 - 25	Glycolysis & Respiration	9	Enzyme Activity
Sept. 28 – Oct. 2	An End to Respiration	9	Respiration
Oct. 5 – 9	Photosynthesis	10	Photosynthesis
Oct. 13 - 16	Midterm Lecture Exam 1 Photosynthesis	10	No Lab
October 12 – Thanksgiving, College closed			
Oct. 19 - 23	The Cell Membrane	7	Movement of Molecules
Oct. 26 – 30	Intracellular Communication	11	Midterm Lab Exam
Nov. 2– 6	Mitosis & Cell Cycle	12	Mitosis & Meiosis
Nov. 9 - 14	Sources of Variation	13	Fruit Fly Eye Pigments
Nov. 11 – Wednesday - Remembrance Day, College closed			
Nov. 16 - 20	Midterm Lecture Exam 2 Inheritance	15	Lab 8 completion
Nov. 23 - 27	DNA Replication	16	DNA Lab
Nov. 30 – Dec. 4	Protein Synthesis	17	DNA Lab completed
Dec. 7 - 11	Regulation of Gene Expression	18	Lab Exam

5. Basis of Student Assessment (Weighting)

Lab Exam I	15%
Lab Exam II	15%
Midterm I	10%
Midterm II	15%
Final Lecture Exam	30%
Assignments/labs/quizzes	15%

*** 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 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. <i>(For these courses a final grade will be assigned to either the 3rd course attempt or at the point of course completion.)</i>
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.

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.

What this Course Promises You

What does it mean to be alive? How do single cells like bacteria or complex multicellular organisms like us cope with the constraints of life? In this course you will have the opportunity to explore these questions from a biological perspective. Even if you don't become a biologist you will gain a broadened understanding of questions that may affect your life like: What is cancer? Why is crucial that women have children younger in life and less so for men? Why do we age? What should you take for diarrhea – a sugary drink or plain water? What does cloning imply?

If you embrace and apply the ideas of this course you will understand how all living cells manage energy, interact and communicate with other cells, and then reproduce or die. Moreover you will understand what controls these processes and how their repetition determines the fate of each organism.

How You Will Fulfill These Promises?

To realize these promises you must take responsibility for your own learning and participate as an active learner. Can you be committed to this class? You must make this choice. This is not the type of class you can drop into occasionally; you have to be really involved.

To take charge of your education, you must be willing to read and write. If you do not learn to communicate in words, you cannot formulate fully developed thoughts. To accomplish these goals, you will be given assignments that you will read, analyze, and think about between each class. You must also be willing to summarize and analyze data. To this end you will generate and analyze laboratory data and write lab reports. These assignments will help refine your thinking and understanding so that it becomes clearer, more precise, logical, and well-grounded in fact.

Ways to Understand the Nature and Progress of your Learning.

To evaluate your progress in reaching these goals (and to provide you with feedback on your learning) we will use at the following items:

1. Lecture and lab exams designed to assess your recall and understanding of the biological concepts relating to evolution and phylogeny. The lecture exams will be cumulative. The goal here is to encourage you to continue to learn and receive feedback on the critical concepts of the course.
2. Lab reports that will clarify the concepts of the lecture component of the course and enhance your numeracy and literacy.
3. Ongoing group quizzes and assignments designed to solidify and clarify concepts from the course. These will be group projects and will be jointly graded.