

COURSE OUTLINE

1. Instructor Information

- (a) Instructor: W. Donald MacRae
- (b) Office hours: M (1:30-3:30), W (9:30-10:30, 11:30-12:30), R (10:30-12:30) and by app't.
- (c) Location: F 340B
- (d) Phone: 370-3430
- (e) E-mail: dmacrae@camosun.bc.ca
- (f) Website: www.camosun.bc.ca/~dmacrae

2. Intended Learning Outcomes (Official Approval Pending)

- a) 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.
- b) Differentiate among the various transport mechanisms available to mobilize molecules across cell membranes.
- c) Name and outline the pathways utilized by cellular respiration and photosynthesis and explain the importance of these processes to living organisms.
- d) Describe the basic steps of DNA replication and indicate its role in cell division and inheritance.
- e) 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.
- f) Identify and explain the principles and consequences of the cell cycle, including both mitosis and meiosis.
- g) Examine the basic principles of Mendelian genetics and describe how these relate to other topics encompassed in this course.
- h) Describe and explain the role of growth regulators in the control of plant growth, development and physiology.
- i) Describe and explain the diversity of control mechanisms in animal systems, including the role of the endocrine and nervous systems.
- j) 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) Text

Campbell, Neil A., and Jane B. Reece 2002. **BIOLOGY, 6th edition.**
Benjamin/Cummings Publishing Company, Inc., California.

(b) Lab Manual

Camosun College Biology Faculty. 2002. **Biology 226 (Plant and Animal Physiology),**
Camosun College, Victoria, B.C.

4. Course Content and Schedule

Lectures: MThF, 9:30-10:20

Lab: T, 9:30-12:20

Week	Date	Topics/exams	Chapter	Labs/exams
1	Sept. 3-6	Introduction to Study of Life Macromolecules: structure and function	1 5	Introduction to Study of Life • Both lab groups
2	Sept. 9-13	Membrane Structure and Function	8	Lab 1: molecules of Life
3	Sept. 16-20	Cellular Respiration	9	Lab 1: molecules of Life
4	Sept. 23-27	Photosynthesis	10	Lab 2a: photosynthesis Lab 2b: respiration
5	Sept. 30 - Oct. 4	Molecular Basis of Inheritance	16	Lab 2a: photosynthesis Lab 2b: respiration
6	Oct. 7-11	From gene to protein • Transcription and translation	17	Lab 3: DNA restriction Lab Lab 4: Genetics of Eye Pigments
7	Oct. 14-18	• Transcription and translation - continued	17	Lab 3: DNA restriction Lab Lab 4: Genetics of Eye Pigments
8	Oct. 21-25	The Cell Cycle	12	Lab 3 and 4: continued
9	Oct. 28 – Nov. 1	LECTURE MIDTERM Meiosis and Sexual Lifecycles	13	Lab 3 and 4: continued
10	Nov. 4 - 8	Genetics	14	Lab 5: control systems in plants
11	Nov. 12-15	Plant responses to internal and external signals	39	Lab 5: control systems in plants
12	Nov. 18 – 22	Chemical signals in animals Endocrine system	45	Lab 6: control systems in animals • both lab groups in the computer lab
13	Nov. 25-29	Nervous system	48	Lab. Completion and review • both groups
14	Dec. 2-6	Sensory and Motor Mechanisms	49	Lab. exam

3 hours of lecture and 3 hours of lab (on alternate weeks). The student should expect to spend an additional **4-6** hours per week outside of scheduled class time for completion of assignments and studying

5. Basis of Student Assessment

(a/b) Assignments/Quizzes		
	Lecture:	15%
	Lab:	15%
(c) Exams		
	Lab:	15%
	Lecture Midterm:	20%
	Lecture Final:	35%

6. Grading System

The following percentage conversion to letter grade will be used:

A+ = 95 - 100%	B = 75 - 79%	D = 50 - 59%
A = 90 - 94%	B- = 70 - 74%	F = 0.0 - 49%
A- = 85 - 89%	C+ = 65 - 69%	
B+ = 80 - 84%	C = 60 - 64%	

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

Taylor, Martha R. 2002. **STUDENT STUDY GUIDE FOR CAMPBELL'S BIOLOGY, 6TH EDITION**. Benjamin/Cummings Publishing Company, Inc., California.

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College Calendar, Registrar's Office or the College web site at <http://www.camosun.bc.ca>

ACADEMIC CONDUCT POLICY

There is an Academic Conduct Policy. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section.

www.camosun.bc.ca/divisions/pres/policy/2-education/2-5.html