



School of Arts & Science
BIOLOGY DEPARTMENT
BIOL 126-001A/B and 002A/B
Physiological Basis of Life
Winter 2007

COURSE OUTLINE

1. Instructor Information

Instructor: Thomas Mace
Office Hours: 12:30 – 1:30, M - F
Location: F248D
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Email: Mace@Camosun.bc.ca
Website: N/A

2. Intended Learning Outcomes

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

Campbell, Neil A. and Jane B. Reece. 2005. **Biology 7th ed.** Benjamin Cummings

Camosun College. **Biology 126 Laboratory Manual.**

4. Course Content and Schedule

	Week	Lecture Topic	Laboratory Exercise
1	Jan. 8 - 12	Characteristics of Life (p. 831, pp 142 – 144)	Introduction : No Scheduled Exercise
2	Jan. 15 - 19	Photosynthesis – Introductory Stuff (pp.61 - 65, 69 – 74, 148 – 150, 161 – 164)	Tools for Scientific Discovery (Exercise 1)
3	Jan. 22 - 26	Photosynthesis – The Process (pp. 146 - 150, Chapt.10)	Enzyme Activity (Ex. 3.2)
4	Jan. 29 – Feb. 2	An End to Photosynthesis	Photosynthesis (Ex. 5.1, 5.2)
5	Feb. 5 - 9	Glycolysis and Respiration (Chapt.9) Reading Break Feb.8 - 9	Chloroplast Isolation (Ex. 5.3)
6	Feb. 12 - 16	Plant Nutrition (Chapt.37)	Respiration (Ex. 4)
7	Feb. 19 - 23	Animal Nutrition (Chapt.41)	Midterm Lab Exam
8	Feb. 26 – Mar. 2	Midterm Exam – Mar.1 The Cell Membrane (Chapt.7)	Movement of Molecules (Exercises 2.1, 2.2, 2.3)
9	Mar. 5 - 9	Intercellular Communication (Chapt.11, pp. 118 – 121)	<i>Caenorhabditis</i> - Introduction
10	Mar. 12 - 16	Mitosis and the Cell Cycle (pp. 360 – 361, Chapt.12)	<i>Caenorhabditis</i> (Exercise 6.13)
11	Mar. 19 - 23	DNA Replication (Chapt.16)	Transpiration (Ex. 5.4, 5.5)
12	Mar. 26 - 30	Protein Synthesis (Chapt.17)	Plant Growth (Ex. 5.6 – 5.10)
13	Apr. 2 - 6	The Genome (pp.362 – 381) Good Friday – College Closed	Effects of Thyroxin on Metabolism (Ex.7)
14	Apr. 9 - 13	Easter Monday – College Closed Sources of Variation (pp.241 - 249)	Final Lab Exam

Final lecture examination to be scheduled during formal exam period

5. Basis of Student Assessment (Weighting)

Midterm Lecture Exam	20 %	Final Lecture Exam	35 %
Lab Exam I	17.5 %	Lab Exam II	17.5 %
Assignments	10%		

6. Grading System

Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
95-100	A+		9
90-94	A		8
85-89	A-		7
80-84	B+		6
75-79	B		5
70-74	B-		4
65-69	C+		3
60-64	C		2
50-59	D		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 at camosun.ca or 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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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 them throughout their 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 on the College web site in the Policy Section.