School of Arts & Science
Biology

Biol. 126 Physiological Basis of Life
Fall 2004

COURSE OUTLINE

1. Instructor Information

(a) Instructor: T.F. Mace

(b) Office hours: 12:30-1:30 Monday - Friday

(c) Location: F248D

(d) Phone: 370-3436

(e) E-mail: mace@camosun.bc.ca

(f) Website: N/A

2. Intended Learning Outcomes

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) Texts

Campbell, Neil A. and Jane B. Reece. 2002. **Biology 6th ed.** Benjamin Cummings

(b) Other

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

4. Course Content and Schedule

	Lecture Topic	Laboratory Exercise
Sept. 7 – 10	Introduction Macromolecules (Chapts.4, 5)(Review)	No Scheduled lab
Sept. 13 – 17	Biological Membranes (Chapt.8)	Tools for Scientific Discovery
Sept. 20 – 24	Cellular Respiration (Chapt.9)	The Molecules of Life
Sept. 27 – Oct.1	Photosynthesis (Chapt.10)	Movement of Molecules
Oct.4 - 8	The Molecular Gene (Chapt.16)	Cellular Respiration
Oct. 11 - 15	Protein Synthesis (Chapt.17)	**Thanksgiving – No Lab**
Oct. 18 - 22	**Midterm Exam – Oct. 20 (Weds)** The Cell Cycle (Chapt.12)	Photosynthesis
Oct. 25 - 29	Meiosis and Chromosomal Heredity (Chapt.13, 19)	**Lab Exam I**
Nov.1 - 5	Developmental Controls – Plants (Chapt.35)	The Chromosome
Nov. 8 - 12	Nov. 11 Remembrance Day – College Closed Plant Sensory Systems (pp 802 - 825) Animal Coordination – Endocrines (Chapt.45)	Restriction Digest One Gene: One Enzyme
Nov. 15 - 19	Animal Coordination – Nervous System (Chapt.48)	Restriction Digest (Continued) One Gene: One Enzyme (Continued)
Nov. 22 - 26	Animal Coordination – Nervous System	Plant Growth: Hormones
Nov. 29 – Dec. 3	Sensory Systems (pp 1057 - 1075)	Control Systems in Animals
Dec. 6 - 10	Muscle Contraction (pp 126 – 132, 1080 - 1084)	**Lab Exam II**

Final Lecture Examination to be scheduled during formal examination period (Dec. 13 - 21).

5. Basis of Student Assessment

(a) Assignments: 10%

(b) Quizzes: N/A

(c) Exams

Midterm Lecture Exam 20 %
Final Lecture Exam 35 %

Lab Exam I 17.5 %
Lab Exam II 17.5 %

(d) Other (e.g. Project, Attendance, Group Work): N/A

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

N/A

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