School of Arts & Science

Biology 126 – Physiological Basis of Life
Fall 2007

Course Information

Instructor: Larry Anthony, Ph. D. **Office**: Fisher 340A

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Drop-in office hours:

Mon 1:30 PM – 2:20 PM
Tue 3:30 PM – 4:20 PM
Wed 3:30 PM – 4:20 PM
Thu 1:30 PM – 2:20 PM, 3:30 PM – 4:20 PM
I will also be available at other times if necessary. Simply arrange an appointment.

Course Materials

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

Lab Manual
Biology 126. Laboratory Manual. Camosun College.

Course Evaluation

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

Grading System

The School of Arts and Science have adopted the following letter grade and percentage scale:

A+	90-100	B+	77-79	C+	65-69	D	50-59
A	85-89	B	73-76	C	60-64	F	0-49
A-	80-84	B-	70-72				

Calendar Description

The structure and functions of macromolecules, storage of information and replication of DNA as well as the role of DNA in protein synthesis and inheritance are described and related to the functions of whole organisms. Transport mechanisms, basic metabolism and hormonal and nervous regulation of function are explored with examples.

Prerequisites

English 12 or assessment and "C+" in Biology 12

Intended Learning Outcomes

- 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.
- Differentiate among the various transport mechanisms available to mobilize molecules across cell membranes.
- Name and outline the pathways utilized by cellular respiration and photosynthesis and explain the importance of these processes to living organisms.
- Describe the basic steps of DNA replication and indicate its role in cell division and inheritance.
- 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.
- Identify and explain the principles and consequences of the cell cycle, including both mitosis and meiosis.
- Understand the different mechanisms whereby animals regulate their internal environment in the face of changing internal and external conditions, including regulation of tissue oxygen levels, responses to self and non-self, control of internal electrolyte concentrations, internal communication and reproduction
- 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.

Exam Return Policy

Term lecture and lab exams will be returned and taken up with the class. The exams will then be collected by the instructor and retained for a period of one year. Students are welcome to review these exams in the instructor's office during regular office hours.

Laboratory Attendance

Attendance at the entire laboratory session is mandatory. If, for reasons of illness or family crisis, you are unable to attend a lab, the instructor must be notified. Such notification must occur in advance if possible. A penalty of 3% will be deducted for each unexcused absence from the lab. If a lab requires a written report, students who have not attended will not be given credit for that report; i.e. you may not use another student's data to write a report for credit.

Late Assignments

Assignments and reports must be handed in at the beginning of the class/ lab on the due date. Late assignments and reports will be accepted, but they will be assessed a penalty of 15% of the value per day late; weekends count as two days. No assignments or reports will be accepted after the other student's assignments or reports have been returned.

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. Should two very similar reports be received, the mark will be either be divided between the students, or both students will forfeit their mark for that report. Plagiarism, including the copying of any part of assignments, laboratory reports and essays is a serious offense and is considered to be an academic misconduct.

Cheating

A student caught cheating on an exam will forfeit that exam and perhaps the course. Cheating is a serious offense and is considered to be an academic misconduct.

Missed Exams

All in class lecture and lab exams and the final lecture exam must be written at the scheduled time. Only in emergency circumstances, illness or family crisis, may a student write an exam before or after the scheduled time. It is the student's responsibility to ensure that the instructor is notified if an exam must be missed. Such notification must occur in advance if possible or, at the latest, the day of the exam. The student will be required to provide verification of the emergency circumstance (i.e. medical certificate) in order to write a make-up exam.

Student Responsibilities

1. Students are expected to hand in any required reports on time. Late assignments will receive a penalty of 10% per day.
2. Attendance is important to ensure success. If unable to attend a session, the student is responsible for arranging with a classmate to obtain information such as notes, handouts and announcements.
3. Examinations must be written as scheduled. Exceptions may be made for emergencies at the discretion of the instructor and **only if documentation of the illness or emergency acceptable to the department** is received. The student must notify the instructor in advance of the examination.
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 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.
7. Students must turn off cell phones and pagers during lectures and laboratory sessions.
8. All laboratories start punctually. Information necessary for performing the laboratory correctly and safely is given at the beginning of the lab.
9. **All students must wear a lab coat during laboratory sessions.** Failure to bring a lab coat to the lab may result in being unable to work in the lab and loss of credit for the lab.

Academic Misconduct

Academic misconduct includes, but is not limited to, the following acts:

1. Giving or receiving unauthorized information to or from another student during any examination or test.
2. Obtaining or providing, without authorization, questions or answers relating to any examination or test prior to the time of the examination or test.
3. Using unauthorized sources of information during any examination or test.
4. Asking or arranging for another person to take any examination or test in one's place.

According to Camosun College policy, the consequence for academic misconduct is an 'F' grade for the work involved or for the course as a whole.

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.

http://www.camosun.bc.ca/about/policies/education-academic/e-2-student-services-&-support/e-2.5.pdf

**** HOLIDAYS OR SCHEDULED FLIGHTS ARE NOT CONSIDERED TO BE EMERGENCIES ****

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Schedule of Anticipated Lecture and Laboratory Topics (subject to change)

Week	Day	Date	Lecture Topic (Text Page/Chapter)	Laboratory Exercise
1 (Sep 4-7)	Tue	4-Sep	Characteristics of Life (831, pp 142-144)	No Lab
	Wed	5-Sep		
	Thu	6-Sep		No Lab
2 (Sep 10-14)	Tue	11-Sep	Introduction to Metabolism (61-65, 69-74, 146-164)	Tools for Scientific Discovery (Ex 1)
	Wed	12-Sep		
	Thu	13-Sep		Tools for Scientific Discovery (Ex 1)
3 (Sep 17-21)	Tue	18-Sep	Glycolysis and Respiration (Ch 9)	Enzyme Activity (Ex 3.2)
	Wed	19-Sep		
	Thu	20-Sep		Enzyme Activity (Ex 3.2)
4 (Sep 24-28)	Tue	25-Sep	Glycolysis and Respiration (Ch 9)	Respiration (Ex 4)
	Wed	26-Sep		
	Thu	27-Sep		Respiration (Ex 4)
5 (Oct 1-5)	Tue	2-Oct	Photosynthesis (Ch 10)	Photosynthesis (Ex 5.1, 5.2)
	Wed	3-Oct		
	Thu	4-Oct		Photosynthesis (Ex 5.1, 5.2)
6 (Oct 9-12)	Tue	9-Oct	Mitosis and the Cell Cycle (359-361, Ch 12)	No Lab (Thanksgiving)
	Wed	10-Oct		
	Thu	11-Oct		No Lab (Thanksgiving)
7 (Oct 15-19)	Tue	16-Oct	The Cell Membrane (Ch 7)	Chloroplast Isolation (Ex 5.3)
	Wed	17-Oct		
	Thu	18-Oct	DNA Replication (Ch 16)	Chloroplast Isolation (Ex 5.3)
8 (Oct 22-26)	Tue	23-Oct	**Midterm Lecture Exam**	**Midterm Lab Exam**
	Wed	24-Oct		
	Thu	25-Oct		**Midterm Lab Exam**
9 (Oct 29-Nov 2)	Tue	30-Oct	Protein Synthesis (Ch 17)	Movement of Molecules (Ex 2.1-2.3)
	Wed	31-Oct		
	Thu	1-Nov		Movement of Molecules (Ex 2.1-2.3)
10 (Nov 5-9)	Tue	6-Nov	Circulation and Gas Exchange (Ch 42)	*Caenorhabditis* (Ex 6.1)
	Wed	7-Nov		
	Thu	8-Nov		*Caenorhabditis* (Ex 6.1)
11 (Nov 13-16)	Tue	13-Nov	Immune System (Ch 43)	No Lab (Remembrance Day)
	Wed	14-Nov		
	Thu	15-Nov		No Lab (Remembrance Day)
12 (Nov 19-23)	Tue	20-Nov	Osmoregulation and Excretion (Ch 44)	Plant Growth (Ex 5.6-5.10)
	Wed	21-Nov		
	Thu	22-Nov		Plant Growth (Ex 5.6-5.10)
13 (Nov 26-30)	Tue	27-Nov	Endocrine System (Ch 45)	Transpiration (Ex 5.4, 5.5)
	Wed	28-Nov		
	Thu	29-Nov		Transpiration (Ex 5.4, 5.5)
14 (Dec 3-7)	Tue	4-Dec	Reproduction (Ch 46)	Final Lab Exam
	Wed	5-Dec		
	Thu	6-Dec		Final Lab Exam