



School of Arts & Science
BIOLOGY DEPARTMENT
BIOL 126
Physiological Basis of Life
Winter 2014 (Jan-Apr)

COURSE OUTLINE

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

⚡ Please note: the College electronically stores this outline for five (5) years only.
It is **strongly recommended** you keep a copy of this outline with your academic records.
You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

1. Instructor Information

Instructor:	Sarah Cockburn		
Office Hours:	Mon	1:00 PM – 2:20 PM	
	Tue	9:30 AM – 10:50 AM	
	Thurs	10:00 AM – 10:50 AM	
Location:	F352		
Phone:	250-370-3925		
Email:	cockburns@camosun.bc.ca		
Website:	http://online.camosun.ca/ (D2L entry site)		

IMPORTANT NOTE: If my office hours do not match up with your schedule, this should not dissuade you from coming to see me! If you would like to meet to discuss anything pertaining to the course *not* during my scheduled office hours, simply arrange an appointment by e-mail (cockburns@camosun.bc.ca) and I will be very pleased to meet with you at a mutually convenient time. ☺

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. 2011. Biology, 9th ed., Pearson Education, Inc., San Francisco, CA.
- 2) Camosun College Biology Faculty. Winter, 2013. Biology 126 Lab Manual, Camosun College, Victoria, B.C.

4. Course Content and Schedule

Class Schedule:

Lectures:	Tue (Y216)	1:00 PM – 2:20 PM
	Fri (Y216)	1:00 PM – 2:20 PM
Lab Section A:	Wed (F224)	9:30 AM – 12:20 PM
Lab Section B:	Wed (F224)	1:30 PM – 4:20 PM

Course Content:

See Last Page

5. Basis of Student Assessment (Weighting)

Lab Exam I	12.5%
Lab Exam II	12.5%
Midterm I	12.5%
Midterm II	12.5%
Final Lecture Exam	30%
Assignments/labs/quizzes	20%

Midterms I and II, as well as the lab exams, will be unit exams. The final lecture exam will be cumulative. Please bring a pen *and* pencil to all exams.

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. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of course completion.)
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 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 the College web site in the Policy Section.

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**; although lab work is done in groups, material submitted for grading must be processed and submitted independently. Plagiarism, **including the copying of any part of assignments or lab assignments**, is a serious offence and is considered to be academic misconduct.

Cheating

A student caught cheating on an exam will forfeit all credit for that exam and perhaps for the course. Cheating is a serious offence and is considered to be academic misconduct. **Cheating includes, but is not limited to, using unauthorized materials in a quiz/exam and providing information to another person regarding exam content.**

The consequences for cheating and plagiarism are outlined by Camosun College policies (see <http://camosun.ca/about/policies/education-academic/e-2-student-services-&-support/e-2.5.pdf> and <http://camosun.ca/about/policies/education-academic/e-2-student-services-&-support/e-2.5.1.pdf>) and may be severe.

Additional information

Lab Safety

Under **NO** circumstances will students ingest food or drink in the lab. Taking oral medication or applying makeup or lip balm in the lab is also prohibited. You may leave the lab at a convenient time if you are thirsty, need a snack or require medication. For safety reasons students are **required** to wear closed shoes and pants in all lab times. Flip flops, sandals or shoes with holes are not acceptable. The spirit of this is safety, so make sure your 'closed-toed' shoes are actually safe!

Please note that **lab coats are mandatory** in the lab at all times. If you forget your lab coat, you can rent one for \$5. You cannot remain in the lab if you are not wearing a lab coat. Please make sure that you bring your lab coats with you each week.

Failure to adhere to the lab safety principles will result in the inability to enter the lab, or expulsion from the lab, and the subsequent **loss of credit** for that lab, including any written assignments

Laboratory Attendance

The laboratory experience is critical to the course objectives and so attendance throughout the entire laboratory session is mandatory and will be noted. Lateness in arriving, failure to attend the lab or leaving the lab before its scheduled finish time will result in forfeiting credit for that lab, including any written assignments.

If a lab session is missed, another student's data **may not** be used to complete a lab assignment for credit. Exceptions can be made **at the instructor's discretion** in legitimate cases of emergency (e.g. illness); in such cases the instructor must receive **advance notification** and **documented evidence** of the situation (e.g. medical certificate) and grant approval for any accommodation. In cases when a lab is done over two weeks, missing one of the weeks without instructor approval will result in a 50% reduction in the grade for any assignment associated with that lab.

It is *absolutely* necessary to read and mentally work through each exercise before coming to lab. Otherwise you may not be able to finish on time, annoy your lab partner, or flunk a pre-lab pop quiz. Please also come prepared with a pencil and a few sheets of unlined and graph paper, in case drawings are required.

Lecture Attendance

Attending lectures is a critical part of succeeding in this course. There may be some in class quizzes and other in-class activities for marks. If you know that there is a lecture that you will miss where an announced activity will take place, you must let me know ahead of time and have a legitimate reason to miss it (e.g. an emergency or an illness with documented evidence).

Lectures will be delivered in a PowerPoint format. PowerPoint slides will be made available on the Biology 126 D2L website.

Missed Exams and Assessments

Quizzes and the exams must be written at the scheduled times. Under no circumstances will make-up exam be administered. However, it is understood that emergency circumstances occur (e.g. illness or emergency in the immediate family); for such circumstances accommodation may be offered at the discretion of the instructor, provided (a) the instructor is notified in advance of the exam (not after) and (b) the student provides documented evidence of the circumstance (i.e. medical certificate). The accommodation will be in the form of a make-up exam or adjusting the weighting of the final lecture exam to make up the missing marks, at the discretion of the instructor.

Please note: holidays or scheduled flights are not considered to be emergencies!

Late Penalties

Unless otherwise stated, all assignments are due at the **beginning** of the lab/class of the due date. There is a 10% /day late penalty (including weekend days). The format is expected to be professional, i.e. a neat, legible, clean copy. "Rough" drafts risk rejection and a subsequent late penalty. If the assignment is more than one page, separate pages **must be stapled** before you come to class

Note: There is the option of 1 free late assignment. There will be no penalty provided the assignment is received **prior** to it being marked and returned to the class. Any assignment received after its return to the rest of the class will be marked but will not receive credit.

Study Habits:

Lecture notes will be provided in point form. These should be used as a study guide, not as your sole source of information! You will need to write down additional key words for examples and explanations given during lecture. It is also recommended practice to transcribe these notes into a study-friendly format after each lecture, incorporating additional information from your textbook. Study these notes before the next class to prepare yourself for new material, which will often build on previously covered material.

Due to time constraints, not all details can be covered in lecture, and you may be held responsible for textbook material not specifically discussed in class. Please keep up with your readings, and take advantage of office hours if you need extra clarification and help, or simply would like to discuss a topic a little further.

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
Jan 6 - 10	Introduction & Characteristics of Life	1,4,5	No lab scheduled
Jan 13 - 17	Metabolism - Introductory	8	Tools for Scientific Discovery
Jan 20 - 24	Glycolysis & Respiration	9	Enzyme Activity
Jan 27 - 31	Respiration completed Photosynthesis	9 10	Respiration
Feb 3 - 7	Photosynthesis	10	Fermentation & Cellular Respiration
Feb 10 - 14	Lecture Exam 1 (Feb 11)	7	Lab cancelled for reading break
February 10 Family Day College closed, February 13 & 14 Reading Break College Closed			
Feb 17 - 21	The Cell Membrane	7	Photosynthesis
Feb 24 - 28	Intracellular Communication Mitosis & Cell Cycle	11 12	Midterm Lab Exam
Mar 3 - 7	Mitosis Meiosis	12 13	Movement of Molecules
Mar 10 - 14	Sources of Variation Lecture Exam 2 (Mar 14)	14 - 16	Mitosis & Meiosis
Mar 17 - 21	Inheritance DNA Replication	15, 16	Fruit Fly Eye Pigments (Part 1)
Mar 24 - 28	DNA Replication	16	Fruit Fly eye Pigments (Part 2) DNA Lab (Part 1)
Mar 31 - Apr 4	Protein Synthesis	17	DNA Lab (Part 2)
Apr 7 - 11	Protein Synthesis Regulation of Gene Expression	17 18	Lab Final