

COURSE OUTLINE



School of Arts & Science

***BIOL 100 Non-Majors Biology
Fall 2009***

COURSE OUTLINE

Fundamentals of Biology in the context of contemporary issues. Topics include basic principles of biochemistry and cell biology, genetics and nutrition, animal structure and function. Prerequisites: English 12 or assessment. *Math 10 recommended.*

Lecture (A&B)	Tues 6:30 – 9:30	Fisher 336
Lab A	Thurs. 6:30 - 7:50	Fisher 238
Lab B	Thurs. 8:00 – 9:30	Fisher 238

1. Instructor Information

Instructor: William Hulbert, Ph.D.

Office hours drop-in: Mon: 10:30-11:30/Tues: 5:30-6:30/Wed: 2:30-3:30/Thurs 5:30-6:30, additional appointments upon request

Office location: Fisher 340 D

Phone: 370-3434

e-mail: hulbertw@camosun.bc.ca

web site: TBA

2. Intended Learning Outcomes

1. Work in a culture of scientific endeavor and use critical thinking skills.
2. Identify the critical roles played by water in the maintenance of life on earth.
3. Explain the structures and roles of biological macromolecules, particularly carbohydrates, proteins and lipids.
4. Describe the complexity and diversity of cellular ultrastructure and the functions of significant cellular organelles, in particular: chloroplasts, mitochondria, ribosomes, Golgi apparatus, cilia and flagellae.
5. Describe basic metabolism and energy producing pathways within the cell.
6. Explain the concept of the gene in the contexts of both Mendelian inheritance as well as the biochemical expression of genetic information.
7. Relate the structure of nucleic acids to the storage and replication of genetic information.
8. Explain the mechanisms used to regulate and translate genetic information into the assembly of functional proteins.
9. Describe the interactions between the environment and long-term changes in genetic information, particularly in consideration to neoplasia.
10. Describe the anatomy of the human digestive, cardiovascular and excretory systems and explain how the physiology of these organ systems is related to organization at the molecular and cellular level.
11. Describe the structure and explain the functions of the human immune system. Apply this knowledge to immune dysfunction, particularly allergies and AIDS.

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3. Required Materials

- (a) Textbook: T Audesirk, Audesirk, G and Byers, B. 2008. **Biology: Life on Earth**, 8th ed., Pearson Education, San Francisco.
- (b) **BIOL 100 Laboratory Manual**
- (c) Optional: "Get Ready for Biology" "An Introduction to Chemistry for Biology Students"

4. Course Content and Schedule

The following tentative schedule is subject to change if deemed necessary by the instructor.

Note: Midterms are scheduled for the first lecture of the week, unless specified otherwise.

Wk #	Week of	BIO 100 LECTURE TOPICS	TEXT CH.	BIO 100 LAB TOPICS
1	Sept. 7 Holiday 7th	Course Introduction; Characteristics & Organization of Life; Scientific Method	1	Introduction, Lab Safety
2	Sept. 14	Overview of Biology; Biochemistry Basics; Water	1, 2	1. Microscopes & Measurements
3	Sept. 21	Organic Macromolecules; Types of Cells; Organelles;	--- 3, 4	2. Prokaryotic and Eukaryotic Cells
4	Sept. 28	Cell Membranes & Transport; Energy; Enzymes	5, 6	3. Diffusion & Osmosis
5	Oct. 5	MID-TERM I (<i>1st lec of wk</i>) Photosynthesis and Cellular Respiration	part of 7, 8	4. Enzymes
6	Oct. 12 Holiday 12th	DNA; Replication; Mutation	--- 9	5. Mitosis: Onion Root
7	Oct. 19	Cell Division: Mitosis/Meiosis; Cancer	11	<i>Review lab</i>
8	Oct. 26	Protein Synthesis: Transcription & Translation	10	<u>LAB EXAM I</u>
9	Nov. 2	Mendelian Genetics; Sex-linkage	12	7. CATLAB (<i>in computer lab TBA</i>)
10	Nov. 9 Holiday 11th	MID-TERM II (<i>1st lec of wk</i>) Digestion & Nutrition	--- 34	6. Human Genetics
11	Nov. 16	Circulation	32	8. Nutrition
12	Nov. 23	Gas Exchange/Respiration	33	9. Human Organ Systems: Models
13	Nov. 30	Excretion: Urinary System Immune System	35 36	10. Human Organ Systems: Models (10=9 cont.)
14	Dec. 7	Homeostasis; Tissue Types	31	<u>LAB EXAM II</u>
FINAL EXAM scheduled by registrar – check CAMLINK. Do <u>not</u> make holiday plans during this period!				

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5. Basis of Student Assessment

Assignments/quizzes	15%
Exams:	
Midterm I	15%
Midterm II	15%
Lab Exam I	15%
Lab Exam II	15%
Final Exam	25%

Midterms and lab exams will be unit exams; the final exam will be comprehensive, with proportionately greater emphasis on the last topics not covered by previous exams.

Midterm and final exams will be a mix of multiple choice and short answer questions.

Lab exams will consist of a series of “stations” consisting of equipment and/or specimens, models, data etc, with accompanying questions testing both practical and theoretical knowledge.

Please bring a pen *and* pencil (with eraser) to all exams

6. Grading System

The following percentage conversion to letter grade will be used:

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

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 further information.

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

STUDENT 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

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>

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ADDITIONAL INFORMATION

Academic Conduct: Be sure that you are familiar not only with the Student Conduct Code (s.a.), but also with the General Department Policies, which are stated in the lab manual. **Cheating or plagiarism will not be tolerated in any form, and may result in "0".**

Each student is required to sign and hand in a Laboratory Safety Contract prior to commencing laboratory work in the course.

Attendance: You are expected to attend all classes and labs, and be on time. It is *your* responsibility to acquire *all* information given during a class missed, incl. notes, hand-outs, assignments, laboratory data, changed exam dates etc.

Exams: Exams have to be written when scheduled. There are no make-up exams during the term. **A missed exam results in "0" except in case of documented emergency or illness** (doctor's note required stating that student is too sick to attend class during a specified time period). Valid documentation of illness/emergency needs be received within 1 week of the illness/emergency. With a valid excuse, the weighting of the missed exam will be added to the final exam, along with additional questions on untested course material. **Please bring a pen and soft pencil to all exams. No programmable devices are allowed in exams.**

Labs: You need to attend labs and lab exams during your assigned section (A or B). Switching between sections on a permanent or temporary basis requires instructor's permission. Lab assignments can only be handed in for labs actually attended (except in cases of documented illness/emergency). You are encouraged to discuss assignments with your lab partner, however, **each assignment has to be your individual work – beware of plagiarism.** It is absolutely necessary to read and mentally **work through each exercise before coming to lab.**

Lab Assignments: Unless otherwise stated, all lab assignments are due at the beginning of the lab on the due date. There is a **15%/day non-negotiable late penalty** (rounded to the nearest full mark) except in cases of documented illness/emergency. Late assignments will **not** be accepted after marked assignments have been returned to the rest of the class. A **professional format** is expected, i.e. a neat, legible, clean copy. "Rough" drafts risk rejection and a subsequent late penalty or reduced marks. If the assignment is more than one page, separate pages **must be stapled**. The format will be discussed and examples provided with regards to presentation.

Study Habits: You will probably find this course is very labor-intensive because you are literally learning a foreign language. Good (and regular!!) study habits are required to do well in this course. You should plan on a **minimum of 6 hours** outside of scheduled class time for the completion of assignments and for general studying. Joining a study group can help this make more fun. Some **"study hints" are posted on the course web site**, and the college also offers study skill courses and individual consultations (s.a.).

D2L: Lectures will be given in power point form and they will be posted on D2L. Other material including animations, videos and literature will also be posted on D2L.

Assessments: All assessments will come from the text. There will be weekly assignments, quizzes on vocabulary, multiple choice questions from the text and diagrams. All assignments are due the first lecture of the week.