

	<b>School of Arts &amp; Science</b> <b>BIOLOGY DEPARTMENT</b> <b>BIOL 103-003A/B</b> <b>Non-Majors General Biology</b> <b>Winter 2016</b>
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## COURSE OUTLINE

*The College electronically stores this outline for five (5) years only. It is recommended you keep a copy of this outline with your academic records. You may need this outline for future application/s for transfer credit/s to other colleges/universities.*

### 1. Instructor Information

Course Website:	<a href="http://online.camosun.ca/">http://online.camosun.ca/</a> (D2L)
Instructor:	(William) Don MacRae
Office Hours:	Tue & Thurs (10:30-12:30), Wed (1:00-2:00)
Location:	F346A
Phone:	250-370-3437
Email:	dmacrae@camosun.bc.ca

### 2. Intended Learning Outcomes

Upon completion of this course, the student will be able to:

1. Describe the concept of homeostasis.
2. Explain how basic physicochemical changes can impact cell function.
3. Work in a culture of scientific endeavor and use critical thinking skills.
4. Identify the critical roles played by water in the maintenance of life on earth.
5. Explain the structures and roles of biological macromolecules, particularly carbohydrates, proteins and lipids.
6. Describe the complexity and diversity of cellular ultrastructure and the functions of significant cellular organelles, in particular chloroplasts, mitochondria, ribosomes, Golgi apparatus, cilia and flagella.
7. Describe basic metabolism and energy producing pathways within the cell.
8. Explain the concept of the gene in the contexts of both Mendelian inheritance as well as the biochemical expression of genetic information.
9. Relate the structure of nucleic acids to the storage and replication of genetic information.
10. Explain the mechanisms used to regulate and translate genetic information into the assembly of functional proteins.
11. Describe the interactions between the environment and long-term changes in genetic information, particularly in consideration to neoplasia.
12. 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.
13. Describe the structure and explain the functions of the human immune system. Apply this knowledge to immune dysfunction, particularly allergies and AIDS.

### 3. Required Materials

Textbook: Openstax Concepts of Biology

- can be downloaded from: <https://openstaxcollege.org/textbooks/concepts-of-biology> or from D2L course site

Lab manual: available on the D2L course site

- print the lab manual and bring to each lab period

Internet access is required to access the course D2L website for course management and to complete assignments

### 4. Course Content and Schedule

**Lectures:** Tuesday and Thursday 8:30 AM– 9:50 PM, Young Room 201

**Lab:** Section A: Monday, 1:30 – 4:20 PM, Fisher Rm. 226

Section B: Wednesday, 9:30 – 12:20 PM, Fisher Rm. 226

Biology 103 is a 1<sup>st</sup> year College “non-majors” course. It is assumed that you did not complete Biology 12 or that you want to upgrade your understanding of Biology to that level. If you plan to major in Biology, it will be necessary for you to complete two first year “majors” courses in Biology to proceed. In majors courses, a broad coverage of topics is required as a foundation for upper level courses. Non-majors courses may approach topics in a way that is more broadly applicable to the life of the learner.

There are countless ways to apply your understanding of biology. This semester, we will explore the topics listed in the “learning outcomes,” searching for ways to best apply them to our lives. People differ in their experiences and ideas and this approach to a subject works best if we can share these with each other. You will sometimes be asked to work in groups to accomplish the learning tasks associated with this course.

### 5. Basis of Student Assessment (Weighting)

Classroom Assignments*	10%
Reading Assignments	10%
Chapter Tests**	45%
Labs	5%
Lab Tests	20%
Final Exam	10%

\* A student who chooses not to complete classroom assignments can have the 10% grade added to the Chapter Tests category

\*\* If a student misses a Chapter test because of illness or emergency, a make-up test will be offered as a part of the Final Exam.

\*\* Any three Chapter Tests can be re-written as a part of the Final Exam.

## 6. 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](http://camosun.ca) for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
<b>I</b>	<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.
<b>IP</b>	<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. <i>(For these courses a final grade will be assigned to either the 3<sup>rd</sup> course attempt or at the point of course completion.)</i>
<b>CW</b>	<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.

## 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.

## Course Schedule

Wk	Date	Lecture Topics	Lab	Lab Topics
1	Jan 11-15	Chemistry of Life (Ch 2)		Introduction
2	Jan 18-22		1	Measurements
3	Jan 25-29	Cell Structure and Function (Ch 3)	2	Microscopes and Cells
4	Feb 1 - 5	How Cells Obtain Energy (Ch 4)	3	Macromolecules
5	Feb 8	<i>Family Day</i>		
	Feb 9-12	Reproduction at the Cellular Level (Ch 6)	4	Diffusion and osmosis
6	Feb 15-17	The Cellular Basis of Inheritance (Ch 7)		No labs
	Feb 18-19	<i>Reading Break</i>		
7	Feb 22-26	Patterns of Inheritance (Ch 8)		<b>Lab test 1</b>
8	Feb 29-Mar 4		5	Enzymes
9	Mar 7-11	Molecular Biology (Ch 9)	6	Mitosis
10	Mar 14-18		7	Inheritance
11	Mar 21-24	The Body`s Systems (Ch 16)	9	Nutrition
	Mar 25	<i>Good Friday</i>		
12	Mar 28	<i>Easter</i>		
	Mar 29-Apr 1		10	Human Anatomy & Physiology
13	Apr 4-8	The Immune System and Disease (Ch 17)	10	Human Anatomy & Physiology
14	Apr 11-15			<b>Lab test 2</b>
	April 18-26	<i>Exam period</i>		

Lecture topics are arranged in the order in which they will be covered in class but the timing of each topic is approximate. Use this schedule to plan to read the appropriate section of the textbook and complete the Chapter Questions before they are covered in lecture.

Chapter 2	The Chemistry of Life (pp. 31-60)
Chapter 3	Cell Structure and Function (pp. 61-96)
Chapter 4	How Cells Obtain Energy (pp. 97-122)
Chapter 6	Reproduction at the Cellular Level (pp. 141-158)
Chapter 7	The Cellular Basis of Inheritance (pp. 159-178)
Chapter 8	Patterns of Inheritance (pp. 179-203)
Chapter 9	Molecular Biology (pp. 205-229)
Chapter 16	The Body`s Systems (pp. 411- 459)
Chapter 17	The Immune System and Disease (pp. 461-489)