



**CAMOSUN COLLEGE**  
**School of Arts & Science**  
**Department of Biology**

**BIOL-103-RH06 (SIP)**  
**Non-Majors General Biology**  
**Winter 2019**

**COURSE OUTLINE**

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

Ω Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

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**1. Instructor Information**

(a) Instructor	Laura Biggs
(b) Office hours	By appointment (see below)
(c) Location	Fisher 352, Lansdowne Campus OR Edward Milne Community School
(d) Phone	250-370-3909 <b>Alternative:</b> n/a
(e) E-mail	BiggsL@camosun.bc.ca
(f) Website	<a href="https://online.camosun.ca/">https://online.camosun.ca/</a> (D2L)

**Important Note:** Since this course occurs off-campus and during school hours, drop-in office hours will not be held. I am available to answer any questions before/during/after class and lab time. If you would like to meet to discuss anything pertaining to the course, send me an email and we can make an appointment to meet at a mutually convenient time.

**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 flagellae.
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

- (a) **Textbook:** Concepts of Biology (2017), Openstax by Rice University. Available to download for free at [openstax.org/details/concepts-biology](https://openstax.org/details/concepts-biology) and also posted on the course D2L site.
- (b) **Lab Manual:** Biology 103 Lab Manual (Winter 2019), Camosun College. Printed copies will be handed out in the first week of class. Also note that you will need a regular scientific calculator for the labs – you will not be able to use your phone as a calculator!
- (c) **Lecture Outlines:** Lectures will be delivered in a PowerPoint format. The slides will be made available on the course D2L website. These may be used or printed at the student's discretion to help follow the lectures.

### 4. Course Content and Schedule\*

<b>Lectures:</b>	Mondays 9:52am – 12:15pm	@ EMCS
	Wednesdays 2:32pm – 3:12pm	@ EMCS
<b>Labs:</b>	Wednesdays 3:30pm – 6:20pm	@ EMCS
OR	Wednesdays 5:30pm – 8:20pm	@ Camosun Lansdowne, Fisher 244

*\*Please see attached lecture/lab schedules for more details, including location of the lab each week.*

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

- (a) Assignments & Quizzes:

Lab	10%
Lecture	10%

- (b) Lecture Exams:

Midterm 1 (Thursday, March 7)	12.5%
Midterm 2 (Wednesday, April 17)	12.5%
Final Exam (Monday, June 3)	25%

- (c) Lab Exams:

Lab Exam 1 (Tuesday, March 12)	15%
Lab Exam 2 (Wednesday, May 22)	15%

*Note: Midterms and Lab Exams are NOT cumulative, but the Final Exam will be cumulative.*

### 6. Grading System

- Standard Grading System (GPA)\*
- Competency Based Grading System

*\*Grading systems are explained further in this document.*

## 7. Recommended Materials 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 website at [camosun.ca](http://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 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 (see <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.1.pdf>).

**Plagiarism will not be tolerated.** Plagiarism, **including the copying of any part of assignments or lab assignments**, is a serious offence and is considered to be academic misconduct. In some cases, the lab instructor may prefer a lab assignment to be written as a group. In such cases, handing in one assignment for the group will be acceptable. Otherwise, lab assignments handed in by individuals are expected to be individually prepared.

#### 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-and-support/e-2.5.pdf>) and penalties may be severe.

#### Lab Safety

<b>Lab footwear</b>	<ul style="list-style-type: none"><li>For safety reasons <b>WorkSafeBC</b> mandates that students are <b>required</b> to wear closed shoes in all lab times. Flip flops, sandals or shoes with holes are not acceptable.</li></ul>
<b>Eating &amp; drinking</b>	<ul style="list-style-type: none"><li>Under <b>NO</b> 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.</li><li>You may leave the lab at a convenient time if you are thirsty, need a snack, or require medication. If something must be consumed, then it may be taken out of the lab.</li></ul>
<b>Hair</b>	<ul style="list-style-type: none"><li>It is recommended that long hair be tied back during lab periods.</li></ul>
<b>Handwashing</b>	<ul style="list-style-type: none"><li>Hands should be thoroughly washed <b>BEFORE</b> leaving the lab.</li></ul>

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

## Laboratory Attendance

Attendance throughout each laboratory session is mandatory and will be recorded. **Please read through each exercise before coming to the lab.** Labs will start promptly - information necessary for performing the laboratory correctly and safely is given at the beginning of the lab. Lateness in arriving, failure to attend the lab, or leaving the lab early will result in forfeiting credit for that lab, including any written assignments. Lab assignments can only be handed in for labs actually attended. 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. significant illness); in such cases the instructor must receive **advance notification** and **documented evidence** of the situation (e.g. medical certificate) to grant approval for any accommodation. Otherwise, **a 1% final grade penalty applies to any unexcused absence from a lab.** Frequent lates may count as an absence.

## Missed Lecture Exams

**Without exception**, all lecture exams must be written at the scheduled times. 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 the student: (a) notifies the instructor **in advance** of the exam (not after), and (b) provides documented evidence of the circumstance (i.e. medical documentation).

In the event of emergency circumstances, it is at the instructor's discretion whether to administer a make-up exam or adjust the weighting of the final exam to make up the missing marks. Note that holiday travel is NOT considered an emergency.

Due to grade submission deadlines, the final lecture exam may **NOT** be written at an alternate time.

## Missed Lab Exams

**Without exception**, all lab exams must be written at the scheduled times. Lab exams differ from lecture exams in their formatting and the fact that they cover lab content in a non-cumulative manner. Due to the nature of our shared lab space with other courses, lab exams cannot be made up outside of our regularly scheduled lab time.

In the event of emergency circumstances (see previous section), it is at the instructor's discretion whether to adjust the weighting of the lab exams to make up the missing marks. Note that holiday travel is NOT considered an emergency.

## Written Work

Lecture and lab assignments may be assigned at the instructor's discretion. It is the student's responsibility to be informed of any work expected and the dates the work is due. Assignments may be intended to be completed as individuals or as groups, as indicated by the instructor. Work intended to be submitted by an individual must be **completed independently**, keeping in mind student conduct requirements. Work intended for completion by a group must not be completed by an individual. Each person in a group will receive the same mark on any group work. Please submit written work in the format requested by the instructor. Incorrect formatting will result in late penalties and delayed grading. Electronic submissions will not be unaccepted unless otherwise stated by the instructor.

## Late Penalties

All assignments must be handed in by the **time indicated on the assignment**. Late assignments will be graded but marks equivalent to 10% of the total value of the assignment will be deducted for each day past the deadline (weekends only count as one day).

## Study Habits

Good (and regular!!) study habits are required to do well in this course. You should plan on a minimum of 6 hours per week outside of scheduled class time for the completion of assignments and for general studying. Studying in groups can help make this more fun.

Lecture notes will be posted on D2L 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 notes for examples and explanations given during lecture. It is also recommended 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.

Please contact your instructor if you need extra clarification and help, or simply would like to discuss a topic a little further.

## Summary of Student Responsibilities

1. Attending classes and actively engaging in lecture times are optimal for learning and therefore are in the best interests of student success. Should it be necessary to miss a lecture, however, it is the student's responsibility to catch up on anything that may have been missed (e.g. important announcement or assignments).
2. Students must hand in required assignments on time or be subject to penalty.
3. Evaluation of written or oral work will not be given if a student is not present.
4. Students must work independently, except when a group effort is required.
5. Students must know and follow all Safety Rules and Procedures, with **NO EXCEPTIONS**.
6. The use of cell phones is prohibited in the lab and during any exams.
7. All labs and lectures start punctually.

## 8. College Supports, Services and Policies



### Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

### College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

### College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

## A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

### 1. 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		1
0-49	F	Minimum level has not been achieved.	0

### 2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

## B. 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 at <http://camosun.ca/about/policies/index.html> 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 are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
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.

## Lecture Schedule:

Note: The following is a **tentative** schedule of course topics and events. Course topics may be added or deleted as time permits. Any changes to this schedule will be announced in class and posted on D2L.

Week	Lecture Topics	Textbook Chapter* (OpenStax, Concepts of Biology)
1 (Feb 4-6)	Course Introduction Scientific Method	1
2 (Feb 11-13)	Biochemistry Basics, Water, pH Organic Macromolecules	2
3 (Feb 18-20)**	<b>NO CLASS ON MONDAY</b> Cell Biology	3
4 (Feb 25-27)	Cell Biology cont'd Cell Membranes/Transport Energetics & Enzymes	3 4
5 (Mar 4-6)	Cellular Respiration <b>MIDTERM 1 – THURSDAY MARCH 7</b>	4
6 (Mar 11-13)	Cell Division - Mitosis Cell Division - Meiosis	6 7
7 (Mar 18-20)	<b>SPRING BREAK – NO CLASSES</b>	
8 (Mar 25-27)	<b>SPRING BREAK – NO CLASSES</b>	
9 (Apr 1-3)	Mendelian Genetics Patterns of Inheritance	8
10 (Apr 8-10)	DNA Replication Transcription/Translation	9
11 (Apr 15-17)	Transcription/Translation cont'd <b>MIDTERM 2 – WEDNESDAY APRIL 17</b>	9
12 (Apr 22-24)**	<b>NO CLASS ON MONDAY</b> Gene Expression Cancer	9 6
13 (Apr29-May1)	Intro to Animal Structure Homeostasis Excretion	16
14 (May 6-8)	Digestion & Nutrition Circulation	16
15 (May 13-15)	Circulation cont'd Respiration	16
16 (May 20-22)	<b>NO CLASS ON MONDAY</b> Immune System	17
17(May 27-29)	Immune System cont'd Catch-up/Review	17
18 (Jun 3-5)	<b>FINAL EXAM – MONDAY JUNE 3 (during class time)</b>	

\*Textbook chapters noted here will be covered, at least in part. However, in some cases we will not be covering the whole chapter in Biology 103. Only the topics covered during class will be tested on exams.

\*\*Course drop date is **February 19**. The last day to withdraw without a failing grade is **April 25**. Please contact the South Island Partnership office immediately if you choose to withdraw from the course.

**Lab Schedule:**

Labs and lab exams will take place each week on **WEDNESDAYS**. Please pay special attention to the lab locations for each week. Note that labs held at EMCS start at **3:30pm**, and labs held at Camosun College (Fisher Building, Room 244) start at **5:30pm**. Any changes to this lab schedule will be announced in class and posted on D2L.

<b>Week</b>	<b>Lab Location</b>	<b>Lab Number and Topic</b>
1 (Feb 4-6)	EMCS – Sooke	Lab Introduction & Safety 1A/B: Measurements & Equipment, pH
2 (Feb 11-13)	EMCS – Sooke	2: Microscopic Observations
3 (Feb 18-20)	Camosun – Lansdowne Campus	3: Organic Macromolecules
4 (Feb 25-27)	Camosun – Lansdowne Campus	4: Diffusion & Osmosis
5 (Mar 4-6)	Camosun – Lansdowne Campus	5: Enzyme Activity
6 (Mar 11-13)	EMCS – Sooke	<b>LAB EXAM 1 (Tues Mar 12, B block)</b>
7 (Mar 18-20)	<b>SPRING BREAK – NO LAB</b>	
8 (Mar 25-27)	<b>SPRING BREAK – NO LAB</b>	
9 (Apr 1-3)	EMCS – Sooke	Extra lecture period
10 (Apr 8-10)	EMCS – Sooke	6: Mitosis & Meiosis
11 (Apr 15-17)	EMCS – Sooke	7: Inheritance of Human Traits
12 (Apr 22-24)	EMCS – Sooke	8: CATLAB: Inheritance Patterns
13 (Apr29-May1)	EMCS – Sooke	9: Human Nutrition
14 (May 6-8)	Camosun – Lansdowne Campus	10: Human Anatomy
15 (May 13-15)	Camosun – Lansdowne Campus	10: Human Anatomy/Review
16 (May 20-22)	EMCS – Sooke	<b>LAB EXAM 2 (Weds May 22 3:30)</b>
17 (May 27-29)	<b>NO LAB</b>	
18 (Jun 3-5)	<b>NO LAB</b>	