



CAMOSUN COLLEGE
School of Arts & Science
Department of Biology

BIOL-103-003
Non-Majors General Biology
Winter 2020

COURSE OUTLINE

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.

1. Instructor Information

| | |
|-------------------------|---|
| (a) Instructor | Dr. Kate Pettem |
| (b) Office hours | Mon., Tues., Wed., 6 – 6:30pm and by appointment |
| (c) Location | F342D |
| (d) Phone | (250) 370-3250 Alternative: _____ |
| (e) E-mail | pettemk@camosun.ca |
| (f) Website | https://online.camosun.ca/d2l/home |

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) Recommended Textbook: Openstax by Rice University, 2017. Concepts of Biology. Available to download for free at openstax.org/details/concepts-biology. A shortened hard copy version (only the chapters we will use) is available to purchase at the Camosun Bookstore, Lansdowne Campus.

(b) Lab Manual: Biology 103 Lab Manual (W2020), Camosun College. Available to download and print from the course D2L website. **DO NOT PURCHASE FROM THE BOOKSTORE.**

(c) Lecture Outlines: Lectures will be delivered in a PowerPoint format. Accompanying student note packages will be made available on the Biology 103 D2L website. These may be used or printed at the student's discretion to help follow the lectures.

4. Course Content and Schedule

Lectures: Mon. and Wed.: 3:00 – 4:20pm, Fisher Rm. 268

Lab: Tues. (Section A): 3:00 – 5:50pm, Fisher Rm. 226

Tues. (Section B): 6:30 – 9:20pm, Fisher Rm. 226

(SEE LAST PAGE FOR COURSE SCHEDULE AND EXAM DATES)

5. Basis of Student Assessment (Weighting)

| | |
|----------------------------|-----|
| Lab Assignments | 15% |
| Lecture/Online Assignments | 15% |
| Midterm 1 | 10% |
| Midterm 2 | 10% |
| Lab Exam 1 | 15% |
| Lab Exam 2 | 15% |
| Final Exam | 20% |

Midterms 1 and 2, as well as the lab exams, will be unit exams. The final lecture exam will be cumulative for all lecture material. Please bring a pen, pencil and eraser to all exams.

6. Grading System

Standard Grading System (GPA)

Competency Based Grading System

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

Take advantage of our Biology Help Center for FREE drop-in tutoring and help: <http://camosun.ca/services/help-centres/science-help.html#biol>

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. |

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.

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 pre-lab assessment credit.

Laboratory Attendance

A 1% final grade penalty applies to any unexcused absence from lab. Frequent lates may count as an absence. Should you miss roll call at the beginning of lab, please identify yourself to the instructor as "late" or you may remain marked "absent." You need to attend labs and lab exams during your assigned section. Switching between sections on a permanent or temporary basis requires the instructor's permission. Lab assignments can only be handed in for labs actually attended.

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 pen, and at least one printed copy of the lab per lab group.

Missed Exams and Assessments

Quizzes and the exams must be written at the scheduled times. Under no circumstances will a make-up or re-write 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/doctor's note). 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% per day late penalty (including weekend days). Once an assignment has been marked and returned to the class, no late submissions are accepted. No late submissions will be accepted for weekly lab assignments, as they are marked at the beginning of your lab period. 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. Electronic submissions will not be accepted unless otherwise stated by the instructor.

Study Habits

You will probably find Biology 103 not very difficult, but surprisingly labor-intensive. 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 make this more fun.

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 or other sources. Study these notes before the next class to prepare yourself for new material, which will often build on previously covered material.

Please take advantage of office hours if you need extra clarification and help, or simply would like to discuss a topic a little further.

COURSE SCHEDULE IS ON THE FOLLOWING PAGE

(Note: Scheduled dates are subject to change)

Topics may be added or deleted depending upon time constraints

| WK | WEEK OF | LECTURE TOPICS | TEXT CH. | LAB # | LAB TOPICS |
|-----------|------------------|---|-----------------|--------------|--|
| 1 | Jan. 6 – 10 | Course Introduction Scientific Method Biochemistry Basics Water & pH | 1 2 | - | Safety / Meet / Greet / Practice |
| 2 | Jan. 13 – 17 | Organic Macromolecules Cell Biology | 2 3 | 1 | Measurements & Equipment |
| 3 | Jan. 20 – 24 | Energetics Cell Membranes/ transport | 3 4 | 2 | Microscopes & Cells |
| 4 | Jan. 27 – 31 | Enzymes Cellular Respiration | 4 | 3 | Organic Macromolecules |
| 5 | Feb. 3 – 7 | MIDTERM EXAM 1 (Mon. Feb. 3rd) Photosynthesis | 5 | 4 | Diffusion & Osmosis |
| 6 | Feb. 10 – 14 | Cell Division / Mitosis Meiosis | 6/7 | 5 | Enzymes |
| 7 | Feb. 17 – 21 | READING BREAK – NO CLASSES OR LABS | | | |
| 8 | Feb. 24 – 28 | Mendelian Genetics Sex-linked traits | 8 | - | LAB EXAM 1 |
| 9 | Mar. 2 – 6 | DNA Replication Transcription/Translation | 8 9 | 6 | Mitosis & Meiosis |
| 10 | Mar. 9 – 13 | Mutations Gene Expression/Control | 9 10 | 7/8 | Genetics (Fingerprint lab & Cat lab) |
| 11 | Mar. 16 – 20 | Cancer Homeostasis/Excretion | 10 16 | 9 | Human Physiology |
| 12 | Mar. 23 – 27 | MIDTERM EXAM 2 (Mon. Mar. 23rd) Nutrition | 16 | 10 | Reproductive System |
| 13 | Mar. 30 – Apr. 3 | Digestion Circulation | 16 | | TBA |
| 14 | Apr. 6 – 9 | Respiration Immune System | 16 18 | | LAB EXAM 2 |
| | Apr. 14 – 22 | Exam Period FINAL EXAM TBA | - | - | - |