



CAMOSUN COLLEGE
School of Arts & Science
Department of Biology

BIOL-104-D01
Infectious Disease
Winter 2021 (COVID edition)

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 | Thuy Nevado |
| (b) Office hours | F 10:30-11:20 am |
| (c) Location | online using D2L Collaborate |
| (d) Phone | 250-216-2137 |
| (e) E-mail | nevadot@camosun.bc.ca |
| (f) Website | online.camosun.ca |

2. Intended Learning Outcomes

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

1. Differentiate between bacteria, viruses, fungi, parasites and prions based on structural differences.
2. Analyze the different patterns of transmission and virulence mechanisms used by microorganisms to produce disease.
3. Describe how the nonspecific and specific host defenses work against a variety of organisms.
4. Categorize appropriate methods for treatment and control of infectious agents including physical methods, antibiotics and disinfectants and vaccinations.
5. Demonstrate the ability to practice aseptic technique in the microbiology lab and to use a variety of diagnostic tests to identify infectious agents.

3. Required Materials

- (a) Texts
Lab Manual. Posted on D2L.
Text: OpenStax Microbiology. Available free at openstax.org/details/books/microbiology.

4. Course Content and Schedule Schedule is subject to change.

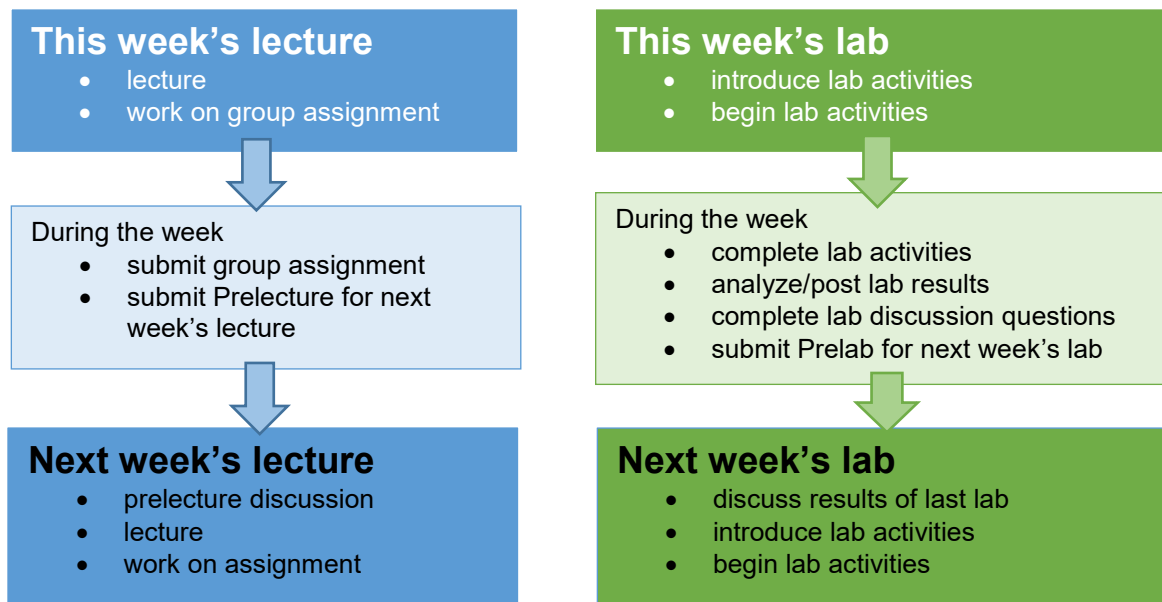
| Week | Week | LECTURE TOPIC (Tuesdays) | ASSIGNMENTS/Prelecture (assigned on Tuesday, due following Tuesday) |
|----------------|------------------------------|--|---|
| 1 | Jan 11-15 | Introduction to infectious disease Types of microbes | Assign 1: Types of microbes Prelect 2: Epidemiology |
| 2 | Jan 18-22 | Pathogenesis and virulence Bacterial structure Foodborne illnesses | Assign 2: Foodborne illness Prelect 3: Alzheimer's disease |
| 3 | Jan 25-29 | Bacterial growth and reproduction Biofilm – Dental plaque | Assign 3: <i>P. gingivalis</i> Prelect 4: Tuberculosis |
| 4 | Feb 1-5 | Antibiotics and resistance – Tuberculosis | Assign 4: Antibiotic resistance Prelect 5: SARS-CoV2 |
| 5 | Feb 8-12 | Viral structure and replication Pathogenesis and virulence – Colds vs. Flu | Assign 5: Respiratory illnesses Prelect 7: Innate immunity |
| 6 | Feb 15 Feb 16-19 | Family Day – College Closed Reading Break | |
| 7 | Feb 22-26 | Innate immune response | Assign 6: Innate response Prelect 8: Adaptive immunity |
| 8 | Mar 1-5 | Adaptive immune response | Assign 7: Adaptive response Prelect 9: Immunization Q |
| 9 | Mar 8-12 | Clonal selection and lymphocyte activation | Assign 8: HIV/AIDS Prelect 10: Ebola |
| 10 | Mar 15-19 | Immunization Q and A – Ebola | Assign 9: Immunization Prelect 11: Vector diseases |
| 11 | Mar 22-26 | Modes of transmission Climate change – Lyme disease | Assign 10: Vector presentation (due week 13) Prelect 12: Malaria |
| 12 | Mar 29-Apr 1 Apr 2 | Protozoan diseases – Malaria Good Friday (College closed) | Work on Vector talk |
| 13 | Apr 5 Apr 6-9 | Easter Monday (College closed) Vector Victoria Virtual Conference | Prelect 14: Helminthic, fungal diseases |
| 14 | Apr 12-16 | Fungal diseases: Cryptococcosis, Candida Helminthic diseases: Dracunculiasis, Anisakis | |
| Exam Period | Apr 19-23 | Final exam (to be scheduled by College Registrar, posted on Camlink) | |

| Week | Week | ONLINE LAB SESSION (Friday) (discuss results from previous lab, intro new lab, complete lab) | Activities | Submissions (to be completed for the following week) |
|-------------|------------------------------|--|--|--|
| 1 | Jan 11-15 | Lab Safety Lab 1: Infection Control | From kit Observation | Lab 1 Discussion Q Prelab 2 |
| 2 | Jan 18-22 | Lab 2: Bacterial Stains and Microscopy | Simulation Analyse results | Lab 2 Discussion Q Prelab 3 |
| 3 | Jan 25-29 | Lab 3: Transfer and Isolation Techniques | How to videos From kit Analyse results | Lab 3 Post your results Lab 3 Discussion Q Prelab 4 |
| 4 | Feb 1-5 | Lab 4: Controlling Microbial Growth – Chemical Parameters | How to videos From kit Analyse results | Lab 4 Discussion Q |
| 5 | Feb 8-12 | Lab 4 results | | |
| 6 | Feb 15 Feb 16-19 | Family Day – College Closed Reading Break | | |
| 7 | Feb 22-26 | Lab Exam I Labs 1-4 | | Prelab 5 |
| 8 | Mar 1-5 | Lab 5: Controlling Microbial Growth – Physical Parameters | How to videos Analyse results | Lab 5 Discussion Q Prelab 6 |
| 9 | Mar 8-12 | Lab 6: Lancefield agglutination and ELISA | How to videos Analyse results | Lab 6 Discussion Q Prelab 7 |
| 10 | Mar 15-19 | Lab 7: Microbial Contamination of Food and Water | How to videos From kit Analyse results | Lab 7 Post your results Lab 7 Discussion Q Prelab 8 |
| 11 | Mar 22-26 | Lab 8: Diagnostic Microbiology | How to videos Analyse results | Lab 8 Video: RG2 & Aseptic technique Lab 8 Discussion Q |
| 12 | Mar 29-Apr 1 Apr 2 | Good Friday (College closed) | | |
| 13 | Apr 5 Apr 6-9 | Easter Monday (College closed) Lab 8 results | | |
| 14 | Apr 12-16 | Lab Exam II Labs 5-8 | | |
| | Apr 19-23 | | | |

5. Basis of Student Assessment (Weighting)

| | |
|-------|--|
| 25% | Prelecture, lecture discussion, prelab, lab discussion (marked for completion/participation) |
| 25% | Group Assignments |
| 12.5% | Lab exam 1 |
| 12.5% | Lab exam 2 |
| 25% | Lecture Final Exam |

Course flow



Each week, during the scheduled lab time on D2L > Collaborate:

- The instructor will introduce the lab activities.
- Starting week 2, the instructor will also discuss results from the previous week's lab. Students will be asked to share their answers to the discussion questions. Student participation in this exercise will earn them **lab discussion** marks. Students unable to join in synchronously can receive marks by submitting their completed lab discussion document to D2L > Assessments > Assignments > Lab results and discussion questions.
- Students will then work on the lab activities.

In the week between scheduled labs:

- Students will complete their lab activities and post results when applicable. Image or video results will be posted to D2L > My Media and then published to D2L > Course media > Lab Results Gallery. Prompt sharing of results will allow us to make conclusions based on a larger data set.
- Students will complete a **prelab** and submit to D2L > Assessments > Assignments > Prelab for completion marks. The prelab usually consists of creating a summary diagram of the procedures for each lab activity described in the lab manual. This will help students visualize what they would be doing in the Microbiology lab.

Each week, during the scheduled lecture time on Collaborate:

- The instructor will spend part of the lecture discussing the week's lecture topic.
- The remaining time will be set aside for students to work online in groups of 4 to discuss and begin an assignment that helps them understand, apply and think critically about the topic.
- In weeks where the following week's prelecture is divided into 4 parts, students will also decide which prelecture topic they will complete for their group.
- Starting week 2, time will also be set aside for discussion of the prelecture topics. Students who participate in this activity during the synchronous Collaborate session will receive marks for **lecture discussion**. Students unable to join in synchronously can receive marks by emailing their discussion points before the start of class to their group members and copying the instructor in the email. This will provide their group members with the appropriate information in time to make use of it.

In the week between scheduled lectures:

- Each group of 4 students will complete and submit one assignment to D2L > Assessments > Assignments > Group assignments. Unless otherwise stated, each assignment will be due one week later at the start of the next week's lecture. These weekly **assignments** will be marked and contribute to 25% of your final grade.
 - Each student will complete one **prelecture** and submit to D2L > Assessments > Assignments > Prelecture for completion marks.
- a) **Prelectures and prelabs** are to be done individually and must be completed before the start of the matching lecture and lab as they will provide the background for case studies, critical thinking exercises, discussion and activities that will occur during class time.
- b) **Assignments** may be intended to be completed as individuals or as groups. The instructor will make clear which is which. 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.
- c) **All 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:
- (i) notifies the instructor **in advance** of the exam (not after), and
 - (ii) provides documented evidence of the circumstance (i.e. medical certificate).

*** HOLIDAYS OR SCHEDULED FLIGHTS ARE NOT CONSIDERED TO BE EMERGENCIES ***

Be sure not to make travel plans for the end of semester until the final exam schedules are finalized and posted. Please ask any family members who might make travel plans on your behalf to consult you before booking tickets.

6. Grading System

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

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. |

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

You are encouraged to **consult your instructor if you require assistance or experience difficulty** with 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.

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, Student Ancillary Fees, Academic Integrity, Grade Review & Appeals, Student Misconduct and Academic Accommodations for Students with Disabilities and Student Penalties and Fines.

9. Course Policies

Late Penalties

All assignments must be submitted by the **time indicated on the assignment**. Be sure to submit all assignments on time to avoid deductions. 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.

Study Habits

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 preparatory work, assignments and for general studying. Joining a study group can help make this more fun.

Lecture notes will be uploaded to the course website. 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.

Please take advantage of office hours 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 and lab times are optimal for learning and therefore are in the best interests of student success. Should it be necessary to miss a class, 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 submit required assignments on time or be subject to penalty.
3. Students must work independently, except when a group effort is required.
4. Students must know and follow all Safety Rules and Procedures.

Academic Misconduct

Academic misconduct includes but is not limited to the following acts:

1. Giving or receiving unauthorized information to or from another student during any examination or test.
2. Obtaining or providing, without authorization, questions or answers relating to any examination or test prior to the time of the examination or test.
3. Using unauthorized sources of information during any examination or test.
4. Asking or arranging for another person to take any examination or test in one's place.
5. Plagiarizing, that is, appropriating the work of another or parts or passages of another's writing, or the ideas or language of the same, and passing them off as the product of one's own mind or manual skill.

According to Camosun College policy, the consequence for academic misconduct is an 'F' grade for the work involved or for the course as a whole. If you would like further information, you can find the Academic Honesty Guidelines by going to the Camosun website and searching for "Arts and Science Academic Honesty Guidelines."