

COURSE SYLLABUS



COURSE TITLE: BIOL-161: Principles of Microbiology for Dental Hygiene
CLASS SECTION: X01
TERM: Fall 2024
COURSE CREDITS: 3
DELIVERY METHOD(S): In person lecture (3h/week)

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.
Learn more about Camosun's [Territorial Acknowledgement](#).

INSTRUCTOR DETAILS

NAME: Thuy Nevado

EMAIL: nevadot@camosun.ca

OFFICE: F248A

HOURS: Tues 3-4 pm, Thurs 10 am-noon and **Thurs 3-4 pm** (after lecture) or by appointment

As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.

CALENDAR DESCRIPTION

Restricted to students in Dental Hygiene (subject to space availability and instructor approval; non-DHYG students may be permitted to register) Students will be introduced to microbiology with an emphasis on human oral health. Students will discuss biofilms in relation to health and disease. Students will learn about diseases of microbial origin that concern dental hygienists in order to illustrate the principles of pathogenesis, host-parasite interaction and modes of transmission. The relationship between microorganisms and infection control in a dental environment will be stressed.

PREREQUISITE(S):

One of:

- C in English 12
- C in Camosun Alternative
- C in ENGL 103 and ENGL 104
- C in ENGL 103 and ENGL 106
- C in ELD 103 and ELD 104

And one of:

- C in Biology 12
- C in Camosun Alternative

And one of:

- C in Chemistry 11
- C in Camosun Alternative

CO-REQUISITE(S):

Not Applicable

EXCLUSION(S):

Not Applicable

COURSE LEARNING OUTCOMES / OBJECTIVES

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

1. Describe the basic principles of microbiology and the classification of microorganisms.
2. Describe the different classes of microorganisms.
3. Describe the formation of biofilms as they relate to dental hygiene practice.
4. Explain infection control and its significance in the dental environment.
5. Describe symbiotic and dysbiotic organisms in the oral microbiome.
6. Explain the role of specific oral microbiota in periodontal diseases and dental caries.
7. Discuss various diagnostic tests used to detect microorganisms involved in oral infections.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

Text: 1) Samaranayake (2018) Essential Microbiology for Dentistry Fifth Edition, Elsevier Ltd. (optional)
2) OpenStax Microbiology. Available free at openstax.org/details/books/microbiology.

Tech requirements. Students will find it helpful to have access to a computer and printer. Office 365 is freely available for Camosun students. Please download/register for these apps so that you can open my Word files (for lecture notes and assignments) and maintain the proper formatting.

Preparation for lectures. An outline of the lecture notes will be available by Sunday evening for the upcoming week's lectures and posted on the course D2L site: <https://online.camosun.ca>.

Students should download and bring a copy of the lecture notes to class so that they can follow along and add to the notes during the lecture. There may also be pre-readings recommended for the lecture. Lecture notes and any suggested pre-readings can be found on D2L > Contents > Lecture > Appropriate Week.

Presentation #1. Each pair of students will research one bacterium of interest to dentistry and prepare a 5-10 min. Powerpoint presentation that they will deliver during the Bacterial Infections Conference lecture time. During the presentation, classmates will be taking notes.

Presentation #2. Each pair of students will research one virus of interest to dentistry and prepare a 5-10 min. interactive presentation that they will deliver during the Viral Infections Conference lecture time. Since classmates will be expected to participate in this presentation and therefore may not have the chance to take notes, the presenting pair will also prepare a short summary to be compiled into table format.

COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

WK	DATES	TUES LECTURE TOPICS	THURS LECTURE TOPICS	ASSIGNMENTS
1	Sep 3, 5	Introduction, procedures Why study microbiology?	Principles of infection control Language of epidemiology	A1: Epidemiology case study (due Sep 10)
2	Sep 10, 12	Pathogenesis & virulence Bacterial structures	Bacterial cell walls, Gm stain Bacterial reproduction	A2: Bacteria (due Sep 17)
3	Sep 17, 19	Bacterial growth & biofilms	Antibacterial agents Infection control	A3: Antibiotic resistance (due Sep 24)
4	Sep 24, 26	Viral structure & replication	How viruses cause disease	A4: Respiratory illnesses (due Oct 1)
5	Oct 1, 3	Innate immunity	Adaptive immunity	A5: Immune system (due Oct 8)
6	Oct 8, 10	Oral defense mechanisms & response to infection	Immunizations Diagnostic testing	A6: Immune response (due Oct 15)
7	Oct 15, 17	Immunizations Q&A	Immunizations Q&A Review	Assign Projects P1/P2 (due Week 11, 12, 13)
8	Oct 22, 24	Midterm Tues Oct 22	Oral ecosystem Oral bacteriome	A7: Bacteriome (due Oct 29)
9	Oct 29-31	Plaque biofilm	Bacterial metabolism Fermentable carbs	A8: Oral microbes and systemic disease (due Nov 5)
10	Nov 5, 7	Microbiology of dental caries	Microbiology of periodontal disease	
11	Nov 12, 14	Bacterial infections relevant to dentistry	Bacterial Infections Conference	P1: 10 min PPT presentation in pairs
12	Nov 19,21	Bacterial Infections Conference	Viral infections relevant to dentistry	P1: 10 min PPT presentation in pairs
13	Nov 26, 28	Viral Infections Conference	Viral Infections Conference	P2: 10 min interactive presentation in pairs
14	Dec 3, 5	Other infectious agents	Review	
	Dec 9-17	Final exam (to be scheduled by College Registrar, posted on myCamosun)		

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines can be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
Assignments (8)	33
Projects/Presentations (2)	12
Midterm lecture exam	20
Final exam	35
	TOTAL
	100%

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information.
<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

COURSE GUIDELINES & EXPECTATIONS

Lecture Attendance

To get the most out of this course, students are expected to attend all classes and be on time. It is your responsibility to acquire all information given during a class missed, including notes, hand-outs, changed exam dates etc.

Assignments may be intended to be completed as individuals or as pairs. 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 pair must not be completed by an individual. Assignments will generally be posted on D2L > Assessments on Tuesdays and will be due the following Tuesday at 1:30 pm, our lecture start time. Students will submit their assignments on D2L > Assessments > Assignments unless they are to be presented in class.

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 in the form of an alternate or oral exam may be offered at the discretion of the instructor, provided the student:

- notifies the instructor **in advance** of the exam (not after), and
- provides documented evidence of the circumstance.

Study Habits

Good and regular study habits are essential to do well in this course. You should plan on a weekly minimum of 6 hours outside of scheduled class time for the completion of readings, assignments and for general studying. Joining a study group can help make this more achievable. 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 and review text and videos to support your understanding. It is also recommended practice to transform lecture notes into a study-friendly format after each lecture. 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.

STUDENT RESPONSIBILITY

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

SUPPORTS AND SERVICES FOR STUDENTS

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

Academic Advising	http://camosun.ca/advising
Accessible Learning	http://camosun.ca/accessible-learning
Counselling	http://camosun.ca/counselling
Career Services	http://camosun.ca/coop
Financial Aid and Awards	http://camosun.ca/financialaid
Help Centres (Math/English/Science)	http://camosun.ca/help-centres
Indigenous Student Support	http://camosun.ca/indigenous
International Student Support	http://camosun.ca/international/
Learning Skills	http://camosun.ca/learningskills
Library	http://camosun.ca/services/library/
Office of Student Support	http://camosun.ca/oss
Ombudsperson	http://camosun.ca/ombuds
Registration	http://camosun.ca/registration
Technology Support	http://camosun.ca/its
Writing Centre	http://camosun.ca/writing-centre

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the "Attendance" section under "Registration Policies and Procedures" (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit

<http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun's Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student's right to choose what is right for them. For more information see Camosun's Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and camosun.ca/sexual-violence. To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-3703841

Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College's Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

Changes to this syllabus: Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.