



CAMOSUN COLLEGE
School of Arts & Science
Department of Biology

BIOL-161-DX01
Principles of Microbiology for Dental Hygiene
Fall 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	Thuy Nevado
(b) Office hours	T 4:30-5:00pm, W 3:00-4:00pm and Th 4:30-5:00pm Office hours will be held virtually on Collaborate.
(c) Location	F248A
(d) Phone	250-370-3433 Alternative: 250-216-2137
(e) E-mail	nevadot@camosun.bc.ca
(f) Website	online.camosun.ca

2. Intended Learning Outcomes

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.

3. Required Materials

- (a) Text: 1) Samaranayake (2018) **Essential Microbiology for Dentistry Fifth Edition**, Elsevier Ltd.
2) OpenStax Microbiology. Available free at openstax.org/details/books/microbiology.
- (b) Other: Lecture notes will be posted on the course D2L website: <https://online.camosun.ca>

4. Course Content and Schedule

Wk	Week	Tues Lecture Topics	Thurs Lecture Topics	Assignments
1	Sep 8-11	Introduction, procedures Why study microbiology?	Principles of infection control Language of epidemiology	A1: Epidemiology case study (due Sep 15)
2	Sep 14-18	Pathogenesis & virulence Bacterial structures	Bacterial cell walls, Gm stain Bacterial reproduction	A2: Bacteria (due Sep 22)
3	Sep 21-25	Bacterial growth & biofilms	Antibacterial agents Infection control	A3: Antibiotic resistance (due Sep 29)
4	Sep 28- Oct 2	Viral structure & replication	How viruses cause disease	A4: Colds, flu and COVID-19 (due Oct 6)
5	Oct 5-9	Innate immunity	Adaptive immunity	A5: Immunity (due Oct 14)
6	(Oct 12) Oct 13-16	(Thanksgiving) Oral defense mechanisms & response to infection	Immunizations Diagnostic testing	A6: Immunization (due Oct 20)
7	Oct 19-23	Immunizations Q&A	Review	
8	Oct 26-30	Midterm Tues Oct 27 (3:00-4:20pm)	Bacterial metabolism Fermentable carbs	A7: Metabolism (due Nov 3)
9	Nov 2-6	Oral ecosystem Oral bacteriome	Plaque biofilm	A8: Bacteriome (due Nov 10)
10	Nov 9-13	Microbiology of dental caries	Microbiology of periodontal disease	A9: <i>P. gingivalis</i> (due Nov 17)
11	Nov 16-20	Bacterial infections relevant to dentistry	Bacterial Infections Virtual Conference	P1: 5 min PPT presentation in pairs
12	Nov 23-27	Bacterial Infections Virtual Conference	Viral infections relevant to dentistry	P1: 5 min PPT presentation in pairs
13	Nov 30- Dec 4	Viral Virtual Conference	Viral Virtual Conference	P2: 5 min interactive presentation in pairs
14	Dec 7-11	Other infectious agents	Review	
	Dec 14-22	Final exam (to be scheduled by College Registrar, posted on Camlink)		

5. Basis of Student Assessment (Weighting)

Quizzes/Assignments (9).....	35%
Presentations (2)	15%
Midterm lecture exam.....	20%
Final exam	30%

6. Grading System

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

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

- a) **Tech requirements.** Students will find it helpful to have access to a computer, webcam, microphone, headphones 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.
- b) **Preparation for lectures.** An outline of the lecture notes will be available by Sunday evening for the upcoming week's lectures. Students should download and print out the lecture notes so that they can follow along during the online 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.
- c) **Lectures on Collaborate.** Classes will be held synchronously online every Tuesday and Thursday afternoon from 3:00-4:20pm. Students will go to D2L > Collaborate and join the appropriate Collaborate session. Each session will be open up to 15 min. before the class start time. Early entry will allow students to check their microphone/webcam//internet connection, socialize, ask questions and get settled.
- d) **Assignments** may be intended to be completed as individuals or as pairs/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. Assignments will generally be posted on D2L > Assessments on Tuesdays and will be due the following Tuesday at 3:00pm, our lecture start time. Students will submit their assignments on D2L > Assessments either through the Quiz tool or the Assignment tool. The difference is mainly in the formatting and the instructor will give specific instructions for each assignment.
- e) **Presentation #1.** Each pair of students will research one bacterium of interest to dentistry and prepare a 5 min. Powerpoint presentation that they will deliver online during the Bacterial Infections Virtual Conference lecture time. During the presentation, classmates will be taking notes. Once the presentation is over, classmates will have a few minutes to ask questions of the presenting pair.
- f) **Presentation #2.** Each pair of students will research one virus of interest to dentistry and prepare a 5 min. interactive presentation that they will deliver online during the Viral Virtual 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. The presentation will be followed by a short 2-3 min. question period.

- g) **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 oral exam 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) or speaks to the instructor on Collaborate.

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-	Required to continue Dental Hygiene program	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.