

MICR408 MICROBIAL PATHOGENESIS
COURSE OUTLINE SPRING 2022

INSTRUCTOR:

Dr. Catherine Bachewich
Sessional Lecturer, Department of Biochemistry and Microbiology, University of Victoria
Affiliate Associate Professor, Department of Biology, Concordia University, Montreal, QC
Email: cbachewich@uvic.ca

INCLUSIVITY

The classroom will be a place where everyone will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expression, national origins, religious affiliations, sexual orientations, ability-and other visible and non-visible differences. All members of this class are expected to contribute to a respectful, welcoming, and inclusive environment for every other member of the class.

TERRITORIAL ACKNOWLEDGEMENT

We acknowledge and respect the lək̓ʷəŋən peoples on whose traditional territory the university stands and the Songhees, Esquimalt and W̱SÁNEĆ peoples whose historical relationships with the land continue to this day.

COURSE TIME/LOCATION:

Monday, Thursday 8:30-9:50 Engineering Computer Science Bldg 116

OFFICE HOURS:

TBA via ZOOM (see Brightspace for link)

COURSE OBJECTIVES:

The aim of the course is to provide a comprehensive overview of the molecular mechanisms of bacterial pathogenesis and host-pathogen interactions. Host defence mechanisms and pathogen evasion strategies, bacterial colonization and invasion, secretion systems, toxins, biofilms, quorum sensing, and current therapeutic strategies will be discussed.

COURSE FORMAT:

Lectures: The course will be delivered Online via ZOOM from Jan. 10-24, followed by face-to-face delivery (unless otherwise specified due to changing circumstances associated with the current pandemic). Students must sign in using their UVIC ID; ZOOM link will be posted on Brightspace. Class sessions will be recorded to allow students who are not able to attend to watch later. The recording will be posted in Brightspace. Students who have privacy concerns can contact me and will have the option to limit their personal information shared in the recording. If you have other questions or concerns regarding class recording and privacy please contact privacyinfo@uvic.ca. Lectures are based on reviews and primary literature; there is no textbook.

Assignments: Three assignments will consist of reading primary research articles and answering questions. Select classes will be designated for students to discuss the paper and questions within assigned groups. Students must then individually complete the assignment and submit their answers by the deadline on Brightspace. Papers and questions will be posted on Brightspace one week before the designated group class time, and must be submitted before the next class.

Exams: Exams are “open-book” and will be completed online via Brightspace, but students are expected to study as if they were writing in class in order to complete the exams within the designated time frame. Students are obligated to sign an academic code of conduct before each exam, and write the exam on their own, without the assistance of others or the internet. Midterm exams will be available to open as of 8:30 am on Brightspace for 24 hours, and must be completed within 120 minutes from the initiation time. No lectures will be held on exam days.

COURSE CONTENT*

1. Introduction	-History and impact of Infectious disease -Introduction to microbial pathogenesis
2. Host-pathogen interactions	-Host defense mechanisms -Bacterial evasion strategies -Microbial colonization and adherence strategies -Microbial invasion strategies
3. Microbiome	-Interaction with host/pathogens -Role in protection from disease and susceptibility to disease
4. Mechanisms of bacterial pathogenesis	-Bacterial secretion systems -Toxins -Apoptosis/necroptosis -Antigenic and Phase Variation -Biofilms & Quorum Sensing
5. Infectious disease treatment strategies	-Antibiotics and Resistance -Vaccines -Other treatments

ASSESSMENT OF STUDENT PERFORMANCE

(1) Techniques to be used:

- Assignment of a numerical mark to multiple choice, short answer and longer answer questions on assignments and exams
- Exams are based on material covered in lectures (powerpoint presentations, papers and discussions).

(2) Evaluation and weighting:

Component	Date	Contribution
Exam I	Feb. 7	25%
Exam II	March 14	25%
Exam III	TBA: Final exam period	32%
Assignments (x 3)	Jan. 27 March 3 April 7	18%

(3) Grading Scheme:

A⁺	90 - 100	B⁺	77 - 79	C⁺	65 - 69	F	< 50
A	85 - 89	B	73 - 76	C	60 - 64	N*	< 50
A⁻	80 - 84	B⁻	70 - 72	D	50 - 59		

* N grades

Students who have completed the following elements will be considered to have completed the course and will be assigned a final grade: **all 3 exams and 3 assignments.**

Failure to complete one or more of these elements will result in a grade of "N" regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student's GPA as 0. The maximum percentage that can accompany an N on a student's transcript is 49. Students are responsible for ensuring that they are properly registered in the course, and are expected to have met all pre/co-requisites for the course.

DEPARTMENT INFORMATION AND POLICIES

1. The Department of Biochemistry and Microbiology upholds and enforces the University's policies on academic integrity. These policies are described in the current University Calendar. All students are advised to read this section.
2. Cell phones, computers, and other electronic devices must be turned off at all times during live class sessions unless being used for the purpose of connecting and engaging with the class.
3. No recordings of live lectures are permitted without permission of the instructor. However, many courses will be recorded by the instructor for accessibility for students unable to attend. If you do not wish to be recorded, contact your instructor to determine if alternative arrangements can be made.
4. Students and instructors are expected to assess their health daily and avoid campus if ill.
5. Course materials, such as notes, problem sheets, quizzes, examinations, example sheets, or review sheets, may not be redistributed without the explicit written permission of the instructor.
6. Students are expected to be available for all exams. Instructors may grant deferrals for midterm examinations for illness, accident, or family affliction. Although students do not require documentation, students must contact their instructor and BCMB office (biocmicr@uvic.ca) with the reason for their absence within 48 hours after the midterm exam. The Department will keep a record of the absences. It is the responsibility of the student to ensure all required components are complete, and to arrange deferred exams/assignments with the instructor, which normally should occur within one week of the original exam date.
7. The Department of Biochemistry and Microbiology considers it a breach of academic integrity for a student taking a deferred examination to discuss the exam with classmates. Similarly, students who reveal the contents of an examination to students taking an examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar). Students must abide by UVic academic regulations and observe standards of scholarly integrity (no plagiarism or cheating). Online exams must be taken individually and not with a friend, classmate, or group, nor can you access notes, course materials, the internet, or other resources without the permission of the instructor. You are prohibited from sharing any information about the exam with others. Use of unauthorized electronic devices and accessing the internet and class material during exams is prohibited unless permission is granted by the instructor. Instructors may use Browser Lockdown Software to block access during classes and exams.
8. Deferral of a final exam must be requested with an Academic Concession form and submitted directly to Undergraduate Records. Deferred final exams for fall term courses will be arranged by the instructor. Deferred final exams or spring term courses will be arranged through Undergraduate Records and must be written before the end of the summer term as stipulated in the University Calendar.
9. Requests for review/remark of a midterm exam must be made within one week of the exam being returned.
10. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.
11. Supplemental exams or assignments will not be offered to students wishing to upgrade their final mark.

12. Anonymous participation in any online classes is not permitted without permission of the instructor.

Important note about COVID-related stress: The current pandemic is placing added stressors- financial, mental, and physical- on everyone. Your wellbeing is of foremost importance. If you are experiencing difficulties coping, the University has resources to help. Please reach out to Counselling Services, the Centre for Academic Communication, or Learning Assistance Program for assistance.

Centre for Accessible Learning: Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, approach the Centre for Accessible Learning (CAL) as soon as possible in order to assess your specific needs. <https://www.uvic.ca/services/cal/index.php>

Course Experience Survey (CES): We value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to us regarding the course and our teaching, as well as to help the department improve the overall program for students in the future. When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to your [CES dashboard](#). You will need to use your UVic NetLink ID to access the survey, which can be done on your laptop, tablet or mobile device. We will remind you nearer the time but please be thinking about this important activity.