

Microbiology 408: Microbial Pathogenesis Course Outline – 2021

Welcome to the 2021 Edition of M408, Microbial Pathogenesis. I am Dr. Caroline Cameron, the Course Coordinator. Here is an overview of the essential aspects of the course.

Lecture Days/Dates/Times: Mondays and Thursdays, 8:30 am-9:50 am, January 11 – April 12, 2021

Please note there are no classes on the following dates: February 15 (Reading week), February 18 (Reading Week), April 5 (Easter Monday)

Recurring Zoom link for course: <https://uvic.zoom.us/j/82935072551>

Instructors: Dr. Caroline Cameron (Course Coordinator), caroc@uvic.ca

Dr. Catherine Bachewich, cbachewich@uvic.ca

Teaching Assistant: Sean Waugh, swaugh@uvic.ca

Office Hours (via Zoom): Dr. Caroline Cameron, Mondays 10:30-11:30 pm, Zoom link for office hours (<https://uvic.zoom.us/j/81958901515>)

Class Format: **Lectures:** All lecture will be synchronous, and all lectures will be recorded. Lecture material will be posted on Brightspace.

In-class group-work and assignment questions: Primary literature papers will be released on Brightspace one week in advance of the class where the assignment will be discussed. Please read the primary literature paper ahead of the scheduled class. The assignment questions will be released on Brightspace at the start of the class where the assignment will be discussed. Classes will be synchronous and will consist of the following structure: 10 minute introduction to topic of primary literature paper and presentation of questions to be answered in class; 35 minutes dedicated to group work in Zoom breakout rooms (group discussion of paper and questions); 20 minutes dedicated to individual work (time for each student to complete the assignment question sheet); 5 minute wrap up session. The assignment sheet must be filled out by each individual student and is due by 5 pm on the day of the assignment (submit via Brightspace; if you encounter problems send via email to swaugh@uvic.ca).

Midterms: Midterms will be online via Brightspace. Online midterm exams must be taken individually and not with a friend, classmate or group, and the information about the exam must not be shared with others. The midterm exams will be “open book” exams; you can refer to the lecture slides and lecture notes, BUT YOU MAY NOT USE THE INTERNET WHILE WRITING THE EXAMS. The midterm will be released at 8:30 am on Brightspace on designated days, a time limit of 80 minutes will be given to complete the exam once started

and the midterm must be completed within 24 hours from release of the exam. On the day of the midterm no lecture or in-class group work will occur, so students can use the scheduled class time to write the midterm. Dr. Cameron or Dr. Bachewich will be available on Zoom on the day of the midterm for the duration of the class time (8:30 am-9:50 am) in case there are questions. If required, clarification questions can be asked via the Chat function of Zoom – please direct the questions to only the instructor (Dr. Cameron or Dr. Bachewich) and not to “everybody” in the Zoom chat box. Students are strongly encouraged to write the exam during the scheduled class time, specifically to join the class Zoom link during the scheduled class time (8:30 am-9:50 am) to take advantage of the ability to ask questions if they require clarification of the exam questions.

TENTATIVE LECTURE SCHEDULE

Month	Day	Overall Topic	Lecture Topic	Instructor	Exam/Assignment
January	11	Course introduction	Introduction	Dr. Cameron	
	14	Host-pathogen interactions	Host defense mechanisms - bacterial evasion strategies		
	18	Host-pathogen interactions	Host defense mechanisms - bacterial evasion strategies		
	21	Host-pathogen interactions			GROUP WORK & ASSIGNMENT #1
	25	Host-pathogen interactions	Microbial colonization and adherence strategies		
	28	Host-pathogen interactions	Microbial invasion strategies		
February	1	Microbiome	Microbiome - Interaction with host/pathogens & role in protection from disease and susceptibility to disease		
	4	Microbiome			GROUP WORK & ASSIGNMENT #2
	8				MIDTERM #1
	11	Mechanisms of bacterial pathogenesis	Antigenic variation & phase variation		
	22	Mechanisms of bacterial pathogenesis	Bacterial secretion systems		
	25				GROUP WORK & ASSIGNMENT #3
March	1	Mechanisms of bacterial pathogenesis	Apoptosis/pyroptosis/necrosis/necroptosis		
	4	Specific pathogens	Extracellular pathogens		

	8	Vaccines	Concepts in vaccine development & implementation		
	11				MIDTERM #2
	15	Mechanisms of bacterial pathogenesis	Toxin Production	Dr. Bachewich	
	18	Mechanisms of bacterial pathogenesis	Biofilms & Quorum Sensing		
	22	Mechanisms of bacterial pathogenesis	Interkingdom interactions: Bacterial/viral co-infections		
	25				GROUP WORK & ASSIGNMENT #4
	29	Infectious disease treatment strategies	Antibiotics, AMPs, Resistance		
April	1	Infectious disease treatment strategies con't	New therapeutic approaches, target identification		
	8	Infectious disease treatment strategies con't	Therapeutics con't		
	12				MIDTERM #3

GRADING SCHEME

Marking of short answer exam questions on material presented in the course and assignment of a numerical mark to each question. Evaluation of performance on the assignments.

<u>Evaluation of the Exams/Assignments and Weighting</u>	
Midterm #1	February 8, 2021, 30% of final grade
Midterm #2	March 11, 2021, 30% of final grade
Midterm #3	April 12, 2021, 15% of final grade
Assignments	In-Class Assignments, 25% of final grade
NO FINAL	

UVic 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:

3 midterms, 4 in-class 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.

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. Many online 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. 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.
5. 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.
6. 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.

7. 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.
8. Requests for review/remark of a midterm exam must be made within one week of the exam being returned.
9. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.
10. Supplemental exams or assignments will not be offered to students wishing to upgrade their final mark.
11. Anonymous participation in 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. 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.