

**Microbiology 408: Microbial Pathogenesis
Course Outline – 2015**

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Course Website: Material posted on CourseSpaces

Textbook: No textbook, all necessary material will be provided in the lectures

TENTATIVE LECTURE SCHEDULE

Month	Day	Section	Topic	Material to be Covered	Instructor	Assignments
January	5	I	Introduction	Content to be covered in course Introduction to microbial pathogenesis	Dr. Cameron	
	8, 12, 15	II	Host defense mechanisms and how bacteria circumvent them Microbiome	1. Non-specific, innate and adaptive host defenses 2. Contribution to host defense 3. Exploitation by pathogens	Dr. Cameron	January 15: class time for discussion and completion of Assignment #1. Focus, microbiome Assignment #1 due January 15th
	19, 22	III	Classic strategies used by bacteria to initiate and maintain infection	1. Microbial colonization and adherence strategies 2. Microbial invasion strategies	Dr. Briant	
	26				Drs. Cameron / Briant	MIDTERM #1
January/ February	29, 2, 5	IV	Selected mechanisms of bacterial pathogenesis	1. Bacterial secretion systems 2. Bacterial surface structures	Dr. Briant	January 29: class time for discussion and completion of Assignment #2. Focus, bacterial secretion systems Assignment #2 due January

						29 th
February	9-13		READING BREAK			
February /March	16, 19, 23, 26, 2	IV	Selected mechanisms of bacterial pathogenesis	<ul style="list-style-type: none"> 3. Antigenic variation 4. Biofilms and quorum sensing 5. modulation of apoptotic processes 6. toxins 	Dr. Briant	
March	5	V	Pathogenesis of selected organisms	<ul style="list-style-type: none"> 1. Intracellular pathogens/Gram-negative bacteria <ul style="list-style-type: none"> a. <i>Salmonella</i> b. <i>E. coli</i> 2. Gram-positive bacteria <ul style="list-style-type: none"> a. <i>Staphylococcus</i> b. <i>Listeria</i> 	Dr. Briant	<p>March 5: class time for discussion and completion of Assignment #3. Focus, gram-negative bacteria.</p> <p>Assignment #4 due March 5th</p>
	9	V	Pathogenesis of selected organisms	<ul style="list-style-type: none"> 3. Spirochetes <ul style="list-style-type: none"> a. <i>Treponema pallidum</i> 	Dr. Cameron	
	12				Dr. Briant	MIDTERM #2
	16	V	Pathogenesis of selected organisms	<ul style="list-style-type: none"> 3. Spirochetes <ul style="list-style-type: none"> b. <i>Borrelia burgdorferi</i> c. <i>Borrelia hermsii</i> 	Dr. Cameron	
	19	VI	Mechanisms of interference with pathogenesis	<p>Antibacterial agents: Mechanisms of action and resistance</p> <ul style="list-style-type: none"> 1. Antibiotics 2. Antibacterial peptides 	Dr. Cameron	<p>March 19: class time for discussion and completion of Assignment #4. Focus, spirochete pathogenesis.</p> <p>Assignment #4 due March 19th</p>
	23, 26	VII	Techniques for studying pathogenesis	<ul style="list-style-type: none"> 1. genetic and genomic approaches 2. proteomic approaches 3. systems biology 	Dr. Cameron	
March/ April	30, 2	VII	Ethics	Brief introduction to research ethics	Dr. Cameron	

GRADING SCHEME

Assessment of Student Performance

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.

Evaluation of the Exams/Assignments and Weighting

Midterm #1: January 26th, 20% of final grade, covers material from January 6th through January 19th inclusive.
Midterm #2: March 12th, 30% of final grade, covers material from January 22nd through March 5th, inclusive.
Assignments: Four assignments, worth 10% of final grade
Final: date to be announced, 40% of final grade, covers material from March 9th through April 2nd inclusive.

Assignments:

Completion of each of four assignments is mandatory and attendance at each of the class discussion sessions is mandatory (attendance will be taken). Failure to attend a group discussion session without prior notification and approval by the instructor or a medical note will result in a loss of the assignment mark for each session missed. Failure to participate in the group discussion sessions and/or failure to contribute to the writing of the assignments will also result in a loss of the assignment mark. Each assignment will be based upon peer-taught group work. The class will be split into groups, and class discussion time will be provided.

Assignments #1-#4 (worth 10% of final grade):

- Four assignments that focus upon primary literature papers (one paper per assignment, papers will be chosen by the instructors).
- In total these assignments will comprise 10% of your final mark.
- Each assignment will require you to critically dissect a primary literature paper, which will test your understanding of the material presented in the paper.
- The chosen papers will be pertinent to the subject matter of the lecture presented on that day.
- The group discussion format and dedicated class time (30 minutes each assignment) will allow you to learn the subject through teaching to your peers.
- A link to the assigned primary literature paper will be posted on CourseSpaces in advance of the class when the assignment will be discussed.
- The assignment will be completed in class.
- **Assignments will be due at the end of each class discussion period.**

The dedicated class times for the assignments will be on:

January 15th, 2015
January 29th, 2015
March 5th, 2015
March 19th, 2015

Revised UVic Grading Scheme (effective 2014)

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:

- 4 assignments, 2 midterms, final exam

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 unless being used for a purpose relevant to the class. Students having a cell phone, tablet, or computer on their person during an exam will be assumed to have it for the purpose of cheating.
3. Any recordings of lectures may only be performed with written permission of the instructor, and are for personal use only. The instructor retains copyright to such recordings and all lecture materials provided for the class (electronic and otherwise); these materials must not be shared or reposted on the Internet.
4. Students are expected to be present for the midterm and final exams. Instructors may grant deferrals for midterm examinations for illness, accident, or family affliction, and students must provide appropriate documentation 48 hours after the midterm exam. 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 a deferred examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar). 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 for 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.

5. Scan sheets for multiple choice exams (bubble sheets) will not be made available for review. Therefore, in addition to filling in answers on the scan sheet, students should also circle their answers in ink on their exam.
6. Professors may refuse to review/remark exams not written in ink. In addition, requests for review/remark of a midterm exam must be made within one week of the exam being returned. Students are expected to promptly pick up midterm exams after marking has been completed, either in class or from the instructor.
7. Examination papers that have pages removed, or are mutilated will not be marked.

Course Experience Survey (CES)

We value your feedback on this course. Towards the end of term, as in all other courses at UVic, you will have the opportunity to complete an anonymous survey regarding your learning experience (CES). 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. The survey is accessed via MyPage and can be done on your laptop, tablet, or mobile device. We will remind you and provide you with more detailed information nearer the time but please be thinking about this important activity during the course.