

MICROBIOLOGY 408
Microbial Pathogenesis
Course Outline: Spring 2023

Classroom: Engineering Computer Science Bldg 116
Time: Monday and Thursday 8:30am – 9:50am

Textbook: There is no text book for this course

Course Coordinator / Instructor: Dr. Aditya Mojumdar (he/him), Petch 270
Office hours: By appointment
email: amojumdar@uvic.ca

We acknowledge and respect the land of the peoples on whose traditional territory the university stands and the Songhees, Esquimalt and

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, abilities 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.

Software and communication platforms: The primary website for the course will be on Brightspace. Lectures will be available on Brightspace. Groups will meet with me in class to work on group projects during scheduled times. Any online communication outside of Brightspace will utilize Zoom, with details to accessing this platform to be available within the Brightspace site. Additional notifications will be made through Brightspace as necessary.

First Scheduled Lecture of course: This will be in Engineering Computer Science Bldg 116 at that time we will discuss the structure of the class.

Course Organization and Marking:

The course is organized as a hybrid of traditional and 'flipped' lesson. Some of the concepts will be included in the traditional lecture

indicated in front of the lecture

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All lectures are available as PDFs (No recordings) at the MICR408 Brightspace site. You are expected to view the PDF lectures on your own.

	Feb 20 (Mon)	Family Day	
	Feb 23 (Thurs)	Reading Break	
13	Feb 27 (Mon)	Groups 1 to 3 meeting	
14	Mar 02 (Thurs)	Groups 4 to 6 meeting	
15	Mar 06 (Mon)	Groups 7 to 10 meeting	

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Opsonization
Examples of bacterial evasion strategies
Lysteria monocytogenes

Topic IV –Mechanisms of bacterial pathogenesis

A. Bacterial secretion systems Overview, Components and Mechanisms (G7)

Sec Pathway SecB and SRP pathway

Tat Pathway

Secretion system types in Gram negative bacteria

Type I Secretion System T1SS E.coli for haemolysin (Hly) toxin

Type II Secretion System T2SS V. cholerae Cholera toxin

Type III Secretion System T3SS eg. Yersinia sp.

Type IV Secretion System T4SS

Secretion system types in Gram positive bacteria

Sec and Tat Pathway

Type V Secretion System T5SS

B. Toxins– Overview, Types and Mechanisms (G8)

Endotoxins

Exotoxins– Types I, II and III General features, Mechanism of action, Regulation and examples

C. Biofilms (G9)

Overview,

Functions,

Formation and Composition

Stages– Reversible adhesion, Semi-irreversible attachment to irreversible, Maturation, Dispersal

Extracellular Polymeric Substance (EPS) 21.5ultim xuElir (7-011-3070 (B) F20-0020-042403.701 (G) 3043

feeding ticks to facilitate tick-to-host transmission. PLoS pathogens, 14(5), e1007106.
<https://doi.org/10.1371/journal.ppat.1007106>

G7

Horstmann, J. A., Lunelli, M., Cazzola, H., Heidemann, J., Kühne, C., Steffen, P., Szefs, S., Rossi, C., Lokareddy, P., K., Wang, C., Lemaire, L., Hughes, K. T., Uetrecht, C., Schlüter, H., Grassl, G. A., Stradal, T. E. B., Rossez, Y., Kolonitskiy, M., & Erhardt,

** N grades

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 in AcsB sel ef1.7 (i)-5 (fb)1.

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