



**CUMMING SCHOOL OF MEDICINE  
GRADUATE COURSE OUTLINE**

<b>COURSE TITLE: Medical Microbiology</b>			
<b>Course</b>	MDSC611		
<b>Pre/Co-Requisites</b>	Cellular, Molecular and Microbial Biology 241 and 343 or equivalent or consent of the Faculty		
<b>Faculty</b>	Cumming School of Medicine, Graduate Science Education		
<b>Instructor Name(s)</b>	Dr. Guido van Marle Dr. Rebekah DeVinney Dr. Nathan Peters	<b>Email</b>	<a href="mailto:vanmarle@ucalgary.ca">vanmarle@ucalgary.ca</a> <a href="mailto:devinney@ucalgary.ca">devinney@ucalgary.ca</a> <a href="mailto:ncpeters@ucalgary.ca">ncpeters@ucalgary.ca</a>
<b>Office Location</b>		<b>Office Hours</b>	By appointment
<b>Instructor Email Policy</b>	Instructors will respond to emails received during working hours by the next working day.		
<b>Telephone No.</b>			
<b>Class Term, Days</b>	Fall 2019, M/W		
<b>Class Times</b>	1:30-2:50 pm		
<b>Class Location</b>	O1508		

<b>COURSE INFORMATION/DESCRIPTION OF THE COURSE</b>
<p>The main theme of the course is Medical Microbiology. The course materials will cover basic principles of medical microbiology, the pathogenesis of infectious disease and the biology of clinically important microbial pathogens including bacteria, viruses, parasites and fungi. Recent concepts will be discussed and students will be expected to present and critically evaluate research advances of their choosing from the current research literature and through case presentations.</p>
<b>LEARNING RESOURCES/REQUIRED READING</b>
<p>Students will be assigned papers from the literature to read for the course. Links to PDF files of these papers will be made available through the University's Desire2Learn (D2L) system.</p>

### COURSE OBJECTIVES/LEARNING OUTCOMES

The main objectives are to provide students with a strong foundation in medical microbiology, focusing on bacterial, viral, parasitic and fungal pathogens.

After completion of the course the student will be able:

1. To discuss how microbes cause disease
2. To critically assess the published literature
3. To write subject reviews and give presentations on current topics in medical microbiology.

### CUT POINTS FOR GRADES

This course adheres to the grading system outlined in the University of Calgary, Faculty of Graduate Studies Calendar. Grades of A+ and A are not distinguished in the calculation of GPAs. Percentage/letter grade conversion used for this course is as follows

Grade	Grade Point Value	Percentage Conversion	Graduate Description
A+	4.00	95-100	Outstanding
A	4.00	90-94	Excellent – superior performance showing comprehensive understanding of the subject matter
A-	3.70	85-89	Very Good Performance
B+	3.30	77-84	Good Performance
B	3.00	72-76	Satisfactory Performance
B-	2.70	68-71	Minimum Pass for Students in the Faculty of Graduate Studies
C+	2.30	63-67	All grades below 'B-' are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements

**Assessment Components:** The University policy on grading related matters is outlined in the [2019-2020 Calendar](#).

Assessment Methods	Description	Weight %	Due Date and Time
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Written Assignment	Bacterial Pathogens Case Report	25%	Oct 2, 11:59 PM
Written Assignment	Viral Pathogens Case Report	25%	Oct 30, 11:59 PM
Written Assignment	Eukaryotic Pathogens Case Report	25%	Nov. 29, 11:59 PM
Oral Presentation	Case Report	25%	In class, Dec 2, 4

#### ASSESSMENT AND EVALUATION INFORMATION

##### ATTENDANCE AND PARTICIPATION EXPECTATIONS:

Students are expected to attend all lectures and participate in class discussions

##### CONDUCT DURING LECTURES

The classroom should be respected as a safe place to share ideas without judgement - a community in which we can all learn from one another. Students are expected to conduct themselves in a mature and courteous manner during ALL lectures. Students are expected to frame their comments and questions to lecturers in respectful and appropriate language, always maintaining sensitivity towards the topic.

**Students are expected to take notes during class and should not rely solely on material supplied by the instructors.**

##### GUIDELINES FOR SUBMITTING ASSIGNMENTS:

For every section (Bacterial Pathogens/Viral Pathogens/Eukaryotic Pathogens) the student will be expected to write a scientific essay which discusses in the context of the current scientific literature the mechanisms by which a specific pathogen (assigned by the section coordinator) causes disease. Each written assignment will be a maximum of 5 pages, single spaced, in length (excluding figures and references). Essay topics will be assigned on the first day of each section (Bacterial, Viral, Eukaryotic). Assignments are due as described in Assessment Methods, and turned in to the appropriate folder in D2L.

##### FINAL EXAMINATIONS:

None

##### EXPECTATIONS FOR WRITING:

Writing skills are important to academic study in all disciplines. In keeping with the University of Calgary's emphasis on the importance of academic writing in student assignments (section E.2 of 2019-20 Calendar), writing is emphasized, and the grading thereof in determining a student's mark in this course. Competence in writing entails skills in crafting logical, clear, coherent, non-redundant sentences, paragraphs and broader arguments, as well as skills with the mechanics of writing (grammar, spelling, punctuation). The University of Calgary offers a number of instructional services through the Students' Success Centre's Writing Support Services (<http://www.ucalgary.ca/writingsupport/>) for students seeking feedback on assignments or seeking to improve their general writing skills. Students are strongly encouraged to take advantage of these programs.

**LATE AND/OR MISSING ASSIGNMENTS:**

- Students who hand in assignments late will be penalized 5% per day for handing in late. Assignments that are handed in 10 calendar days or more after the due date will be refused and the students assigned a score of zero for the assignment.
- Students may hand in assignments late without penalty under the following circumstances:
  - The student has discussed the timelines with course instructor at least 2 days in advance of the due date and the course instructor has granted an extension.
  - There is a valid health or family emergency such as is discussed under the University regulations for deferral of final examinations. Students may be required to provide the Course Coordinator with such documentation related to illness and/or emergency as is discussed and required in the University regulations pertaining to deferral of final examinations. This information can be found in the University Calendar.
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***A student's final grade for the course is the sum of the separate assignments. It is not necessary to pass each assignment separately in order to pass the course.***

COURSE TIMETABLE			
Course Schedule Date	Topic & Reading	Instructor	Assignments/Due Dates & Times
Bacterial Pathogens. Section coordinator: Dr Rebekah DeVinney			
9/09/19	Course introduction, bacterial pathogens B1	van Marle/DeVinney	Assignment 1 available on D2L
9/11/19	Antimicrobial Resistance	Pitout	
9/16/19	Toxins	Berger	
9/18/19	Immune Evasion	Surewaard	
9/23/19	Vaccine Development	Schryvers	
9/25/19	Microbiome	Sycuro	
9/30/19	Polymicrobial Infections	Harrison	
Viral Pathogens. Section coordinator: Dr Guido van Marle			
10/2/19	Viral Pathogens	van Marle	Assignment 1 due on D2L, 11:59 pm
10/7/19	Acute Viral Infections	van Marle	

10/9/19	Persistent Viral Infections	Coffin	
10/14/19	Thanksgiving—No class		
10/16/19	Adaptive Immune Responses Viral Vaccines	Fonseca	
10/21/19	Innate Immune Response	Corcoran	
10/23/19	Vector Borne Infections	van Marle	
10/28/19	Antiviral Therapy	Schaetzl	
Eukaryotic Pathogens. Section Coordinator: Dr Nathan Peters			
10/30/19	Introduction to Eukaryotic Pathogens / Host Evasion and Antigenic variation	Peters	Assignment 2 due to D2L 11:59 pm
11/4/19	Pathogenic Mechanisms - Cryptococcus	Mody	
11/6/19	Drug Treatment and Resistance	Pillai	Presentation topic due to Dr. van Marle via email. 11:59 pm
11/11/19	Fall break—No class		
11/13/19	Fall break—No class		
11/18/19	Pathogenic Mechanisms - Entamoeba	Peters	
11/20/19	Vaccine Development - Leishmania	Chadee	
11/25/19	Co-infection with Helminths	Finney	
11/27/19	Helminths and One Health	Gilleard	
11/29/19			Assignment 3 due to to D2L 11:59 pm
12/2/19	Student presentations		
12/4/19	Student presentations		

#### INTERNET AND ELECTRONIC COMMUNICATION DEVICE INFORMATION

Cell phones must be turned off in class unless otherwise arranged with the instructor.

The use of laptop and mobile devices is acceptable when used in a manner appropriate to the course and classroom activities. Students are to refrain from accessing websites that may be distracting for fellow learners (e.g. personal emails, Facebook, YouTube). Students are responsible for being aware of the



University's Internet and email use policy, which can be found at <https://www.ucalgary.ca/policies/files/policies/electronic-communicationspolicy.pdf>.

## **MEDIA AND RECORDING IN LEARNING ENVIRONMENTS**

### **Media recording for lesson capture**

The instructor may use media recordings to capture the delivery of a lecture. These recordings are intended to be used for lecture capture only and will not be used for any other purpose. Although the recording device will be fixed on the Instructor, in the event that incidental student participation is recorded, the instructor will ensure that any identifiable content (video or audio) is masked, or will seek consent to include the identifiable student content to making the content available on University approved platforms.

### **Media recording for assessment of student learning**

The instructor may use media recordings as part of the assessment of students. This may include but is not limited to classroom discussions, presentations, clinical practice, or skills testing that occur during the course. These recordings will be used for student assessment purposes only and will not be shared or used for any other purpose.

### **Media recording for self-assessment of teaching practices**

The instructor may use media recordings as a tool for self-assessment of their teaching practices. Although the recording device will be fixed on the instructor, it is possible that student participation in the course may be inadvertently captured. These recordings will be used for instructor self-assessment only and will not be used for any other purpose.

### **Student Recording of Lectures**

Audio or video recording of lectures is prohibited except where explicit permission has been received from the instructor.

## **UNIVERSITY OF CALGARY POLICIES AND SUPPORTS**

### **ACADEMIC ACCOMMODATIONS**

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit [www.ucalgary.ca/access/](http://www.ucalgary.ca/access/). Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor. The full policy on Student Accommodations is available at <http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf>

### **IMPORTANT INFORMATION**



Any research in which students are invited to participate will be explained in class and approved by the appropriate University Research Ethics Board

### **COPYRIGHT**

It is the responsibility of students and professors to ensure that materials they post or distribute to others comply with the Copyright Act and the University's Fair Dealing Guidance for Students ([library.ucalgary.ca/files/library/guidance\\_for\\_students.pdf](http://library.ucalgary.ca/files/library/guidance_for_students.pdf)). Further information for students is available on the Copyright Office web page (<https://library.ucalgary.ca/copyright>)

### **A NOTE REGARDING INSTRUCTOR INTELLECTUAL PROPERTY**

Generally speaking, course materials created by professor(s) (including course outlines, presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the professor (s). These materials may NOT be reproduced, redistributed or copied without the explicit consent of the professor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course *at the same time* may be allowed under fair dealing

### **ACADEMIC INTEGRITY**

The Cumming School of Medicine expects intellectual honesty from its students. Course participants should be aware of University policies relating to Principles of Conduct, Plagiarism and Academic Integrity. These are found in the printed Faculty of Graduate Studies Calendar, or online under Academic Regulations in the Faculty of Graduate Studies Calendar, available at [Faculty of Graduate Studies Academic Regulations](#)

### **ACADEMIC MISCONDUCT**

For information on academic misconduct and its consequences, please see the University of Calgary Calendar at <http://www.ucalgary.ca/pubs/calendar/current/k.html>

### **EMERGENCY EVACUATION AND ASSEMBLY POINTS**

Assembly points for emergencies have been identified across campus. The primary assembly points for South Campus (Health Science Centre (HSC); Health & Research Innovation Centre (HRIC); Heritage Medical Research Building (HMRB) and Teaching, Research and Wellness (TRW)) are:

- HSC and HMRB: HRIC Atrium (alternate assembly point is Parking Lot 6)
- HRIC: HMRB Atrium (alternate assembly point is Parking Lot 6)
- TRW: McCaig Tower (alternate assembly point is HMRB – Atrium)

### **APPEALS**

If there is a concern with the course, academic matter or a grade, first communicate with the instructor. If these concerns cannot be resolved, students can proceed with an academic appeal, as per Section N of the Faculty of Graduate Studies Calendar. Students must follow the official process and should contact the Student Ombuds Office (<http://www.ucalgary.ca/provost/students/ombuds>) for assistance with this and with any other academic concerns, including academic and non-academic misconduct

### **THE FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY (FOIP) ACT**

This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIP) and students should identify themselves on written assignments (exams and term work.) by their name and ID



number on the front page and ID on each subsequent page. Assignments given by you to your course instructor will remain confidential unless otherwise stated before submission. The assignment cannot be returned to anyone else without your expressed permission to the instructor. Grades will be made available on an individual basis and students will not have access to other students' grades without expressed consent. Similarly, any information about yourself that you share with your course instructor will not be given to anyone else without your permission

#### **WELLNESS AND MENTAL HEALTH RESOURCES**

The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the excellent mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre), <https://www.ucalgary.ca/wellnesscentre/services/mental-health-services> and the Campus Mental Health Strategy website <https://www.ucalgary.ca/mentalhealth/>

#### **SUPPORTS FOR STUDENT LEARNING, SUCCESS, AND SAFETY**

**Student Ombudsman:** The Student Ombuds' Office supports and provides a safe, neutral space for students. For more information, please visit [www.ucalgary.ca/ombuds/](http://www.ucalgary.ca/ombuds/) or email [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca)

**Student Union:** The SU Vice-President Academic can be reached at (403) 220-3911 or [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca); Information about the SU, including elected Faculty Representatives can be found here: <https://www.su.ucalgary.ca>

**Graduate Student's Association:** The GSA Vice-President Academic can be reached at (403) 220- 5997 or [gsa.vpa@ucalgary.ca](mailto:gsa.vpa@ucalgary.ca); Information about the GSA can be found here: <https://gsa.ucalgary.ca>

#### **SAFEWALK**

Campus security will escort individuals, day or night, anywhere on campus (including McMahon Stadium, Health Sciences Centre, Student Family Housing, the Alberta Children's Hospital and the University LRT station). Call 403-220-5333 or visit <http://www.ucalgary.ca/security/safewalk>. Use any campus phone, emergency phone or the yellow phone located at most parking lot pay booths. Please ensure your personal safety by taking advantage of this service.