



**CUMMING SCHOOL OF MEDICINE  
GRADUATE COURSE OUTLINE**

<b>COURSE TITLE: Medical Microbiology</b>			
<b>Course</b>	MDSC 611		
<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>	Guido van Marle Rebekah DeVinney 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 (online format)
<b>Instructor Email Policy</b>	Instructors will respond to emails received during working hours by the next working day.		
<b>Telephone No.</b>			
<b>TA Name</b>		<b>Email</b>	
<b>Class Term, Days</b>	Fall 2020, M/W		
<b>Class Times</b>	1:30-2:50 pm		
<b>Class Location</b>	Blended format with synchronous online lectures. <b>In person student presentation on Dec 2, Dec 7 and Dec 9, 2020 in room HS 1405A</b>		

This course will take place both **online** via Desire2Learn (D2L) and Zoom via synchronous instruction and **in person**. To best succeed in the course, students are encouraged to participate in the synchronous Zoom sessions and the student presentation. When unable to participate live due to the time difference or unforeseen circumstances, inform the instructor in advance and propose and implement an alternative participation activity.

<b>COURSE INFORMATION/DESCRIPTION OF THE COURSE</b>
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 from the current research literature and through written assignments and case presentations.
<b>LEARNING RESOURCES/REQUIRED READING</b>
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.



#### **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, critiques and give presentations on current topics in medical microbiology.

#### **Communication**

Brightspace (By D2L) is located on the University of Calgary server and will be used extensively for communication with Students. A link to the zoom class will be provided on D2L. It is the student's responsibility to ensure that they receive all posted communications and documents and that they receive e-mails sent by instructors of fellow students through D2L. Only your @ucalgary.ca e-mail address may be linked to D2L. Please ensure that you are regularly checking your @ucalgary.ca account

#### **Learning Technology Requirements**

In order to successfully engage in learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security and malware updates;
- A current and updated web browser;
- Webcam (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Broadband internet connection

Most current laptops will have a built-in webcam, speaker and microphone.

Please see the following for a detailed explanation of the minimal required technology for online learning  
<https://elearn.ucalgary.ca/technology-requirements-for-students/>

A laptop, desktop, tablet or mobile device is required for D2L access. If you need help accessing or using D2L, please visit the Desire2Learn resource page for students: <http://elearn.ucalgary.ca/d2l-student/>.

#### **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	85-94	Excellent – superior performance showing comprehensive understanding of the subject matter
A-	3.70	80-84	Very Good Performance
B+	3.30	75-79	Good Performance
B	3.00	70-74	Satisfactory Performance
B-	2.70	65-69	Minimum Pass for Students in the Faculty of Graduate Studies
C+	2.30	55-64	All grades below 'B-' are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements
C	2.00	50-54	

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

Assessment Methods	Description	Weight %	Due Date and Time
Written Assignment	Bacterial Pathogen Assignment	20%	Oct 5, 2020 11:59 PM
Written Assignment	Viral Pathogen Assignment	20%	Nov 2, 2020 11:59 PM
Written Assignment	Eukaryotic Pathogen Assignment	20%	Dec 1, 2020 11:59 PM
Class participation	Answering questions posted during online class sessions. 5% for each pathogen section.	15%	During each lecture
Presentation	Case Report	25%	In Class Dec 2, 7 and 9

## ASSESSMENT AND EVALUATION INFORMATION

### ATTENDANCE AND PARTICIPATION EXPECTATIONS:

Students are expected to attend all lectures and participate in class discussions. As indicated during lectures questions will need to be answered. To answer those questions attendance will be required. Students are expected to take notes during class and should not rely solely on material supplied by the instructors. **No recordings of lectures will be posted.**

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.

### GUIDELINES FOR SUBMITTING ASSIGNMENTS:

For every section (Bacterial Pathogens/Viral Pathogens/Eukaryotic Pathogens) the student will be expected to write scientific essays which discusses in the context of the current scientific literature the mechanisms by which a specific or groups of pathogens (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 5 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:
  - 1) 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.
  - 2) There is a valid health or family emergency such as is discussed under the University regulations for deferral of final examinations. The type of documentation required is discussed in the University regulations pertaining to deferral of final examinations. This information can be found in the University Calendar.

**Is a passing grade on a particular component essential to pass the course as a whole?** 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
Mon. Sept 7, 2020	No Class - Labour Day		
Bacterial Pathogens: Section coordinator Dr. Rebekah DeVinney			
Wed. Sept 9, 2020	Course Introduction Bacterial Pathogens	van Marle/DeVinney	
Mon. Sept 14, 2020	Antimicrobial Resistance		
Wed. Sept 16, 2020	Toxins		
Mon. Sept 21, 2020	Immune Evasion		
Wed. Sept 23, 2020	Vaccine Development		
Mon. Sept 28, 2020	Microbiome		
Wed. Sept 30, 2020	Polymicrobial Infections		
Viral Pathogens: Section Coordinator Dr. Guido van Marle			
Mon. Oct 5, 2020	Viral Pathogens	van Marle	Assignment Due D2L 11:59 PM
Wed. Oct 7, 2020	Acute Viral Infections	van Marle	
Mon. Oct 12, 2020	No Class - Thanksgiving		
Wed. Oct 14, 2020	Persistent Viral Infections	Coffin	
Mon. Oct 19, 2020	Adaptive Immune Responses & Viral Vaccines	Fonseca	

Wed. Oct 21, 2020	Innate Immune Responses	Corcoran	
Mon. Oct 26, 2020	Vector Borne Infections	van Marle	
Wed. Oct 28, 2020	Antiviral Therapy	Schaetzl	
Eukaryotic Pathogens: Section Coordinator Dr. Nathan Peters			
Mon. Nov 2, 2020	Introduction to Eukaryotic Pathogens / Host Evasion and Antigenic Variation	Peters	Assignment Due D2L 11:59 PM
Wed. Nov 4, 2020	Pathogenic Mechanisms - Cryptococcus	Mody	
CoMon. Nov 9, 2020	No Class – Remembrance Day Break		
Wed. Nov 11, 2020	No Class – Remembrance Day Break		
Mon. Nov 16, 2020	Drug Treatment and Resistance	Pillai	
Wed. Nov 18, 2020	Pathogenic Mechanisms - Entamoeba	Chadee	
Mon. Nov 23, 2020	Vaccine Development – Leishmania	Peters	
Wed. Nov 25, 2020	Co-Infections with Helminths	Finney	
Mon. Nov 30, 2020	Helminths and One Health	Peters	
Tuesday Dec 1, 2020	No class		Assignment Due D2L 11:59 PM
Student Presentations (in Person in HS 1405A)			
Wed. Dec 2, 2020	Student Presentation in Person		
Mon. Dec 7, 2020	Student Presentation in Person		
Wed. Dec 9, 2020	Student Presentation in Person		



## **Guidelines for Zoom Sessions**

Zoom is a video conferencing program that will allow us to meet at specific times for a 'live' video conference, so that we can have the opportunity to meet each other virtually and discuss relevant course topics as a learning community.

To help ensure Zoom sessions are private, do not share the Zoom link or password with others, or on any social media platforms. Zoom links and passwords are only intended for students registered in the course. Zoom recordings and materials presented in Zoom, including any teaching materials, must not be shared, distributed or published without the instructor's permission.

The use of video conferencing programs relies on participants to act ethically, honestly and with integrity; and in accordance with the principles of fairness, good faith, and respect (as the Code of Conduct). When entering Zoom or other video conferencing sessions, you play a role in helping create an effective, safe and respectful learning environment. Please be mindful of how your behaviour in these sessions may affect others. Participants are required to use names officially associated with their UCID (legal or preferred names listed in the Student Centre) when engaging in these activities. Instructors/moderators can remove those whose names do not appear on class rosters. Non-compliance may be investigated under relevant University of Calgary conduct policies. If participants have difficulties complying with this requirement, they should email the instructor of the class explaining why, so the instructor may consider whether to grant an exception, and on what terms. For more information on how to get the most out of your zoom sessions visit: <https://elearn.ucalgary.ca/guidelines-for-zoom/>.

If you are unable to attend a Zoom session, please contact your instructor to arrange an alternative activity (where available). Please be prepared, as best as you are able, to join class in a quiet space that will allow you to be fully present and engaged in Zoom sessions. Students will be advised by their instructor when they are expected to turn on their webcam (such as for group work, presentations, etc).

The instructor may record online Zoom class sessions for the purposes of supporting student learning in this class – such as making the recording available for review of the session or for students who miss a session. Students will be advised before the instructor initiates a recording of a Zoom session. These recordings will be used to support student learning only.

## **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 frame their comments and questions to lecturers in respectful and appropriate language, always maintaining sensitivity towards the topic. Students, employees, and academic staff are also expected to demonstrate behaviour in class that promotes and maintains a positive and productive learning environment.

As members of the University community, students, employees and academic staff are expected to demonstrate conduct that is consistent with the University of Calgary Calendar, the Code of Conduct and Non-Academic Misconduct policy and procedures, which can be found at <https://www.ucalgary.ca/policies/forms/title>.



## 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

### **INSTRUCTOR INTELLECTUAL PROPERTY**

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

### **COPYRIGHT LEGISLATION**

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright ([www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf](http://www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf)) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy

### **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.

