



CUMMING SCHOOL OF MEDICINE  
GRADUATE COURSE OUTLINE

COURSE TITLE: Epidemiology of Infectious Diseases			
Course	MDCH 649/MDSC 613.01		
Pre/Co-Requisites	None		
Faculty	Cumming School of Medicine, Graduate Science Education		
Instructor Name(s)	Jenine Leal, PhD	Email	<a href="mailto:Jenine.leal@ucalgary.ca">Jenine.leal@ucalgary.ca</a>
Office Location	FMC South Tower 801	Office Hours	Appointments on Request
Instructor Email Policy	Emails sent to @ucalgary email will be responded to within 3 business days.		
Telephone No.	403-973-6918		
TA Name, if applicable		Email	
Class Term, Days	Winter 2020, Wednesdays		
Class Times	09:00 – 11:50		
Class Location	HS G744 (except on January 22, 2020 location will be HS O1508)		

COURSE INFORMATION/DESCRIPTION OF THE COURSE
<p>MDCH 649/MDSC 613.01 is a blended course which will be offered through <b>Desire2Learn</b> using Adobe Connect with a combination of in-class and geographically remote students. Students will regularly participate in discussions held through a variety of media including online chats and discussion boards using Desire2Learn, as well as guest lectures and web-based conferences using Adobe Connect.</p> <p>The format for the course is seminar discussion with participation expected from students taking the course face-to-face and from those taking the course on-line. Seminars are led by faculty, students and invited guests. All students are expected to attend each class fully prepared to participate actively in discussions.</p> <p>The focus of this course is on the principles of epidemiology that are of relevance to infectious diseases. The underlying theme for this course will emphasize the research aspects of infectious diseases epidemiology and how the basic techniques of epidemiology and biostatistics are applied in communicable diseases.</p> <p>This course is also intended to foster an interdisciplinary approach and to aid in the integration of knowledge and skills in clinical and community-based epidemiology, infectious diseases, antimicrobial therapy, microbial</p>

pathogenesis, molecular epidemiology, and provide a basis for evaluation of relevant health care services and programs into the community.

The course assignments include contributing to online and in-class discussions, mid-term and final examinations and a term paper. Graduate students are the intended audience.

#### **LEARNING RESOURCES/REQUIRED READING**

Class hand-outs, PowerPoint presentations and readings will be posted on **Desire2Learn** as they become available. Desire2Learn is a sophisticated e-Learning management system that makes use of sound instructional practices, social media, current technology, and intuitive functionality to create powerful and meaningful learning environments. Topics for on-line discussion will be posted throughout the course. Information on **Desire2Learn** is located at <http://elearn.ucalgary.ca/d2l/>. This link will be posted as well. The login site for **Desire2Learn** is <http://d2l.ucalgary.ca>.

Lectures will be recorded and posted on Desire2Learn. Students are expected to be confident users of computer and Internet technology and routinely use these resources.

#### **Adobe Connect System Requirements**

##### **Windows**

- 1.4GHz Intel® Pentium® 4 or faster processor (or equivalent)
- Windows 10, 8.1 (32-bit/64-bit), Windows 7 (32-bit/64-bit)
- 512MB of RAM (1GB recommended)
- Microsoft Internet Explorer 11 or later; Mozilla Firefox; Google Chrome; Windows Edge browser
- For HTML Client - Google Chrome (v66.0 or above), Mozilla Firefox (v55.0 or above) and Edge (EdgeHTML v16 or above)
- Adobe® Flash® Player 11.2+

##### **Mac OS**

- 1.83GHz Intel Core™ Duo or faster processor
- 512MB of RAM (1GB recommended)
- Mac OS X 10.11, 10.12, 10.13, and 10.14
- Mozilla Firefox; Apple Safari; Google Chrome
- For HTML Client - Google Chrome (v66.0 & above), Apple Safari (v11.0 & above) and Mozilla Firefox (v55.0 & above)
- Adobe Flash Player 11.2+

##### **Linux**

- Ubuntu 14.04 and 16.04; Red Hat Enterprise Linux 6
- No application support for Linux. Users on Linux can attend meetings in the browser.
- Google Chrome
- Adobe Flash Player 23.0

##### **Mobile**

- Adobe Connect app for iOS and Android requires Adobe Connect Server version 8.2 or later
- Some features may not be enabled in all Adobe Connect meetings if one is using an Adobe Connect Server older than version 9.4.2 (require for Custom pods)
- Google Android 4.4 or later
- Apple iOS: iOS 8.1.2 or later

**Suggested Textbook**

Nelson, KE; Williams, CM, (Editors) (2014). *Infectious Disease Epidemiology, Third Edition*. Toronto: Jones and Bartlett Learning. Estimated price \$ 125.00 + GST

**COURSE OBJECTIVES/LEARNING OUTCOMES**

**Course Objectives**

The course goals are to:

- Explore the determinants and distribution of infection and disease in a population and the factors that influence the frequency, spread and distribution of infectious diseases;
- Examine the basic concepts of infectious diseases epidemiology such as the "iceberg effect", herd immunity, periodicity, epidemic versus endemic disease, seasonality, resurgence, eradication, vaccination success and failure, etc. using examples; and
- Demonstrate the use of various epidemiological tools in infectious diseases.

**Learner Objectives**

Following completion of this course, students will be able to:

- Identify the factors that influence the frequency, spread and distribution of infectious diseases.
- Apply the basic concepts of infectious diseases epidemiology using examples.
- Demonstrate the epidemiologic tools/methods used to study infectious diseases.

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

Assessment Methods	Description	Weight %	Due Date <u>and</u> Time
Class Participation	Students will regularly participate in discussions held through a variety of media including online chats and discussion boards using Desire2Learn, as well as guest lectures and web-based conferences using Adobe Connect. All students will be expected to attend each class fully prepared to participate actively in discussions. In addition to attendance and general participation, students are expected to complete assigned exercises, activities and/or readings of the topic for the week prior to coming to class, as provided by the course instructor or lecturer.	5%	
Individual Presentation	Students will present and lead a discussion on the impact of political, social, or economic changes on the epidemiology of infectious diseases. Students should prepare a brief presentation (max 5 PowerPoint slides) for the class and should be prepared to motivate discussion afterwards.	5%	January 21, 2020 at 09:00
Mid-Term Examination (Take Home)	This exam is scenario-based and is designed to test the individual's ability to apply the principles and concepts of infectious disease epidemiology to defined problems or situations.  The mid-term exam will be take-home examinations that will be <b>posted on Desire2Learn</b> at least 7 days prior to the date they are due.  <b>Examinations must be posted to the digital drop box on Desire2Learn.</b>	20%	February 26, 2020 at 23:59

Final Examination (Take Home)	<p>This exam is scenario-based and is designed to test the individual's ability to apply the principles and concepts of infectious disease epidemiology to defined problems or situations.</p> <p>The final exam will be take-home examinations that will be <b>posted on Desire2Learn</b> at least 7 days prior to the date they are due.</p> <p><b>Examinations must be posted to the digital drop box on Desire2Learn.</b></p>	30%	April 15, 2020 at 23:59
Individual Paper	<p>Report on the epidemiology of a specific infectious disease or use of a tool for infectious diseases epidemiology that incorporates the principles and concepts presented in the course that are relevant to the specific disease.</p> <p>No longer than 15 pages (excluding references).</p> <p><b>Term papers must be posted to the digital drop box on Desire2Learn.</b></p>	40%	<p>Topic Due: January 29, 2020 in class</p> <p>Paper Due: April 15, 2020 at 23:59</p>

#### ASSESSMENT AND EVALUATION INFORMATION

##### ATTENDANCE AND PARTICIPATION EXPECTATIONS:

Students will regularly participate in discussions held through a variety of media including online chats and discussion boards using Desire2Learn, as well as guest lectures and web-based conferences using Adobe Connect. All students will be expected to attend each class fully prepared to participate actively in discussions.

See assessment description above for more details.

##### GUIDELINES FOR SUBMITTING ASSIGNMENTS:

All examinations and the final paper must be posted online in the digital Dropbox on Desire2Learn (exceptions may be made by the instructor). Files must be uploaded as Microsoft Word documents to facilitate grading. Assignments should have a file name as follows: Student Name\_assignment name\_date. All assignments must be submitted by 23:59 on the date they are due.

The in-class presentation must be posted online in the digital Dropbox on Desire2Learn the day prior to the due date to enable upload on Desire2Learn for the class lecture.

##### FINAL EXAMINATIONS:

Final exam due date is noted above in the Assessment table. It is a take-home exam that will be posted on Desire2Learn at least 7 days prior to the due date.

**EXPECTATIONS FOR WRITING:**

All written assignments will be assessed at least partly on writing skills. Writing skills include not only surface correctness (grammar, punctuation, sentence structure etc.) but also general clarity and organization. Resources used in assignments but be properly documented or referenced. If you need help with your writing, you may use the writing support services offered through the Student Success Centre <https://www.ucalgary.ca/student-services/student-success/writing-support/grad-workshops>.

**LATE AND/OR MISSING ASSIGNMENTS:**

Assignments are due on the specified date by 23:59. Students who hand in assignments late will be penalized 5% per day for handing in late. Assignments that are handed in 14 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 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.

**Is a passing grade on a particular component essential to pass the course as a whole?** Yes – the Individual Paper

COURSE TIMETABLE			
Course Schedule Date	Topic & Reading	Instructor	Assignments/Due Dates & Times
January 15, 2020	Course Introduction & Expectations  Epidemiology of Infectious Diseases: General Principles	Dr. Jenine Leal	Students select presentation topic for next class
January 22, 2020	Impact of social, political, economic and climate changes on the epidemiology of infectious diseases	Dr. Bonnie Meatherall (09:00-10:00) Dr. Jenine Leal	Individual presentations sent to instructor January 21, 2020 at 09:00  Presentations on January 22, 2020 10:30-11:50

January 29, 2020	Healthcare Associated Infections <ul style="list-style-type: none"> <li>• The hospital environment</li> <li>• Types of infections</li> <li>• Risk factors for infections</li> </ul>	Dr. Stephanie Smith (09:00-11:50)	Individual Paper topic due in class
February 5, 2020	Outbreak Epidemiology <ul style="list-style-type: none"> <li>• Surveillance and outbreak detection</li> <li>• Principles of investigation</li> </ul>	Dr. Anna Funk (09:00-11:50)	
February 12, 2020	Human-Animal Interface <ul style="list-style-type: none"> <li>• Zoonotic diseases in Canada</li> </ul>	Ms. Danielle Julien, PhD Candidate (09:00-11:50)	Mid-term Examination Distributed
February 16-22, 2020 READING WEEK - NO CLASSES			
February 26, 2020	The Microbiome <ul style="list-style-type: none"> <li>• What is it?</li> <li>• How does it work?</li> <li>• Clinical relevance</li> </ul>	Dr. Kathy McCoy (09:00-11:50)	Mid-Term Examination Due at 23:59
March 4, 2020	Sexually Transmitted Infections <ul style="list-style-type: none"> <li>• Transmission modes</li> <li>• Common Types</li> <li>• Prevention and Treatment</li> </ul>	Dr. Angel Chu (09:00-10:30) Dr. Jenine Leal (10:30-11:50)	
March 11, 2020	Antimicrobials <ul style="list-style-type: none"> <li>• Use and abuse</li> <li>• Resistance</li> <li>• Ecology</li> <li>• Multi-drug resistant organisms</li> <li>• Stewardship</li> </ul>	Dr. John Conly (09:00-10:30)  Dr. Elissa Rennert-May (10:30-11:50)	
March 18, 2020	Surveillance Techniques <ul style="list-style-type: none"> <li>• Sentinel systems</li> <li>• Active vs passive surveillance</li> <li>• Syndromic surveillance</li> </ul> Management, Analysis and Visualization of Surveillance Data	Dr. Jenine Leal (09:00-11:50)	
March 25, 2020	Gastro-enteritis and Diarrheal Diseases	Dr. Thomas Louie (09:00-11:50)	





### **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](http://www.ucalgary.ca/gradstudies/academicregulations)

### **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.