



# UNIVERSITY OF CALGARY

## DEPARTMENT OF BIOLOGICAL SCIENCES COURSE OUTLINE

### 1. Course: **CMMB/MDSC 565 - ADVANCED TOPICS IN PATHOGENIC MICROBIOLOGY**

Lecture Section(s)      L01      TR      12:30-13:45      SA 109      Fall 2017

**Course Coordinator/  
Instructor(s):**      Dr. R. Devinney      220-4095      rdevinne@ucalgary.ca

Desire 2 Learn: CMMB565

Biological Sciences Department      BI 186      403-220-3140      biosci@ucalgary.ca

### 2. Prerequisites: **CMMB 343 and 431**

See section 3.5.C in the Faculty of Science section of the online Calendar  
[www.ucalgary.ca/pubs/calendar/current/sc-3-5.html](http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html)

### 3. Grading: The University policy on grading and related matters is described sections [F.1](#) and [F.2](#) of the online University Calendar. In determining the overall grade in the course the following weights will be used:

In-class assignments	50% total
Written component	30%
Oral component	20%
Final presentation	20%
Research Proposal	30% total
Letter of intent:	5%
Written proposal	25%

Each piece of work (In Class assignment, class participation, Final presentation, and Research Proposal) submitted by the student will be assigned a numeric score. The student's average numeric score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

**Late Assignments:** Students who hand in assignments late will be penalized **10% per day** for handing in late. Assignments that are handed in 3 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 only 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.

#### Final Grade Scale :

A+ : 95 or higher  
A : 90 and under 95  
A- : 85 and under 90  
B+ : 80 and under 85  
B : 75 and under 80  
B- : 70 and under 75  
C+ : 65 and under 70  
C : 60 and under 65  
C- : 55 and under 60  
D+ : 53 and under 55  
D : 50 and under 53  
F : <50

### 4. Missed Components of Term Work: The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.3](#) of the University Calendar

5. **Scheduled out-of-class activities:** N/A

**REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.** If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **Course Materials:** “**Bacterial Pathogenesis: A Molecular Approach**”, 3<sup>rd</sup> Edition, Salyers, Wilson and Whitt.

This book supplements the primary source material assigned by each instructor, and is available as an eBook at the U. Calgary Library. It is a recommended rather than required text.

7. **Examination Policy:** N/A.

8. **Approved Mandatory and Optional Course Supplemental Fees:** N/A

9. **Writing across the curriculum statement:** In this course, the quality of the student’s writing in in-class assignments and the final paper will factor in the evaluation of those reports. See also [Section E.2](#) of the University Calendar.

10. **Human studies statement:** N/A.

11. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**

(a) **Academic Misconduct:** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties

(b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).

(c) **Student Accommodations:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students *with Disabilities available at* [http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities\\_0.pdf](http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf).

Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Biological Sciences, Dr. H. Addy by email [addy@ucalgary.ca](mailto:addy@ucalgary.ca) or phone 403 220-3140.

(d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPPA). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also

(f) <http://www.ucalgary.ca/secretariat/privacy>.

(g) **Student Union Information:** VP Academic Phone: 403 220-3911 Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)  
SU Faculty Rep. Phone: 403 220-3913 Email: [science1@su.ucalgary.ca](mailto:science1@su.ucalgary.ca), [science2@su.ucalgary.ca](mailto:science2@su.ucalgary.ca) and [science3@su.ucalgary.ca](mailto:science3@su.ucalgary.ca);  
Student Ombuds Office: 403 220-6420 Email: [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca); <http://ucalgary.ca/provost/students/ombuds>

(h) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(i) At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses ([www.ucalgary.ca/usri](http://www.ucalgary.ca/usri)). Your responses make a difference - please participate in USRI Surveys.

Department Approval \_\_\_\_\_ ORIGINAL SIGNED \_\_\_\_\_ Date \_\_\_\_\_

Department Approval  
For NO Final Exam \_\_\_\_\_ ORIGINAL SIGNED \_\_\_\_\_ Date \_\_\_\_\_

Advanced Topics in Microbial Pathogenesis: CMMB565  
 Tues/Thurs 12:30-13:45, SA 109

Week	Day	Date	Topic	Instructor
1	T	9-12-17	Course Introduction	DeVinney
1	Th	9-14-17	Emerging infectious diseases	DeVinney
2	T	9-19-17	Emerging infectious diseases -class discussion	DeVinney
2	Th	9-21-17	Antimicrobials and resistance	Liljebjelke
3	T	9-26-17	Antimicrobials and resistance	Liljebjelke
3	Th	9-28-17	Prep day, assignment 1	Liljebjelke
4	T	10-3-17	Antimicrobials and resistance-in class assignment 1	Liljebjelke
4	Th	10-5-17	Bacterial toxins and adherence	Armstrong
5	T	10-10-17	Bacterial toxins and adherence	Armstrong
5	Th	10-12-17	Prep day, assignment 2	Armstrong
6	T	10-17-17	Bacterial toxins and adherence-in class assignment 2	Armstrong
6	Th	10-19-17	Type VI secretion	Dong
7	T	10-24-17	Type VI secretion	Dong
7	Th	10-26-17	Prep day, assignment 3	Dong
8	T	10-31-17	Type VI secretion-in class assignment 3	Dong
8	Th	11-2-17	Microbiome in health and disease	DeVinney
9	T	11-7-17	Microbiome in health and disease	DeVinney
9	Th	11-9-17	Prep day, assignment 4	DeVinney
10	T	11-14-17	In class assignment 4	DeVinney
10	Th	11-16-17	Molecular mechanisms of host manipulation by bacterial pathogens.	Savchenko
11	T	11-21-17	Molecular mechanisms of host manipulation by bacterial pathogens.	Savchenko
11	Th	11-23-17	Prep day, assignment, 5	Savchenko
12	T	11-28-17	In class assignment 5	Savchenko
12	Th	11-30-17	Student Presentations	All
13	T	12-5-17	Student Presentations	All
13	Th	12-7-17	Student Presentations	All

**Course Information:** The focus of this course is on the virulence mechanisms used by pathogens to infect the host and cause disease. The course is divided into six lecture blocks taught by five different faculty members. The course is very interactive, with a large student participation component. Students will be evaluated on the following components:

**In Class Assignments.** In class assignments are associated with each lecture block. The assignments are comprised of an oral and written component as follows.

Group presentations: Students will participate in two of the five group presentations. The format for these presentations is at the instructor's discretion. In the past they have included discussions of work from the current literature, debates, and problem solving sessions. In each lecture block, one class session is provided for students to prepare for the group presentation (indicated as Prep Day on the schedule) . Presentations are worth 20% of the mark (10% each). Please note that non-presenting students are expected to ask questions and participate in the discussions.

Written assignment: Each student will prepare 3 short (**2 page single spaced max.**) written assignments that are related to the in-class assignment. Students will not have a written assignment on weeks they are part of the presentation team. For example, students presenting for assignments 1 and 4 will write for assignments 2, 3 and 5. The purpose of the assignment is to help prepare for the presentation and class discussion. Assignment formats are at the instructor's discretion, and the assignments are due at the start of each in-class assignment day in the appropriate D2L Dropbox. Written assignments are worth 30% of the mark (10% each).

**Final project.** The final project is comprised of two sections: a written proposal and an oral presentation ("professor for a day"). **This assignment must be focused on microbial pathogenesis.** Bacterial, viral and eukaryotic pathogens are fair game, and the area of choice does not need to have been discussed in class. Students will prepare a research proposal for the written portion, and present a short talk on their proposal during the final two class sessions. Information sheets about this assignment will be available on D2L, and the assignment will be discussed during the initial class session.

Research Proposal. The proposal will be a 5-6-page proposal, with a section critically reviewing the relevant literature, a hypothesis, and specific aims to describe the research strategy and methodologies proposed. A one page letter of intent for the research proposal, describing the proposal topic and briefly outlining research interests is due **Oct 20, 2017** at 11:59 pm. The final proposal is due on **Dec 8, 2017** at 11:59 pm.

"Professor for a day". In this section, students will present a 20 min lecture to the class on the topic area chosen for their research proposal. The lecture should be at the level of a 400-500 series course. The presentation will be evaluated by the course instructors, and students will provide short, written answers to questions pertaining to each of the other student's talks

Instructors:

Dr. Rebekah DeVinney, course coordinator ([rdevinne@ucalgary.ca](mailto:rdevinne@ucalgary.ca)).

Dr. Tao Dong ([tdong@ucalgary.ca](mailto:tdong@ucalgary.ca))

Dr. Karen Liljebjelke ([kliljebj@ucalgary.ca](mailto:kliljebj@ucalgary.ca))

Dr. Glen Armstrong ([armstrog@ucalgary.ca](mailto:armstrog@ucalgary.ca))

Dr. Alexei Savchenko ([alexei.savchenko@ucalgary.ca](mailto:alexei.savchenko@ucalgary.ca))