



CUMMING SCHOOL OF MEDICINE
GRADUATE COURSE OUTLINE

COURSE TITLE: Antibacterial resistance mechanisms			
Course	MDGE 653		
Pre/Co-Requisites	Medical Science 611, Cellular, Molecular and Microbial Biology 431, or consent of the program.		
Faculty	Cumming School of Medicine, Graduate Science Education		
Instructor Name(s)	Alexei Savchenko	Email	alexei.savchenko@ucalgary.ca
Office Location	HRIC-2C66	Office Hours	By appointment
Instructor Email Policy	I will answer emails within 48 hrs		
Telephone No.	403-210-7980		
TA Name, if applicable		Email	
Class Term, Days	Winter, Tu-Th		
Class Times	1:00-2:30 pm		
Class Location			

COURSE INFORMATION/DESCRIPTION OF THE COURSE
<p>This course will familiarise students with the most recent developments in our understanding of antibiotic resistance. The ability of bacteria to develop, recruit and disseminate elements to curb the chemical toxicity of antibiotic drugs will be examined. The course is divided into 4 lecture/key paper review modules. After introduction lecture in each module the students will be given number of key publications relevant to the topic to review and critic on. The reviews will alternate between written assay and oral presentation. After four modules, the students will be given the final assignment of formulating a small proposal for future studies in this research area, which will be discussed in class.</p>
LEARNING RESOURCES/REQUIRED READING
None. Reading and resources will be identified by instructor

COURSE OBJECTIVES/LEARNING OUTCOMES
<p>After successful completion of this course, students should be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate an understanding of key concepts in antibiotic resistance phenomenon

2. Use obtained basic knowledge to develop strategies to control problems related to antibiotic resistance
3. Understand challenges in development of urgently needed antibacterial therapies
4. Improve on effective written and oral communication skills.

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
Written assignment (1)	Student will write short critical review on one of provided key reference papers	20	Jan 20 or 23 – 12 pm
Oral presentation (1)	Student will give oral presentation about reference paper	20	In class
Written assignment (2)	Student will write short critical review on one of provided key reference papers	20	Feb 4 or 6 – 12 pm



Oral presentation (2)	Student will give oral presentation about reference paper	20	In class
Final proposal	Each student will write a short research proposal on a topic presented in the course	20	Feb 10 – 10 am

ASSESSMENT AND EVALUATION INFORMATION
<p>ATTENDANCE AND PARTICIPATION EXPECTATIONS:</p> <p>Attendance is mandatory unless prior arrangements have been made with the instructor. This course relies on cooperative group activity. Students must behave respectfully and professionally at all times. Abuse in any form will not be tolerated.</p> <p>GUIDELINES FOR SUBMITTING ASSIGNMENTS:</p> <p>Students will be expected to write two essays and give two group presentations. The details will be provided in class. Assignments are due as described in the Assessment Components section, and turned in to the appropriate folder in D2L</p> <p>FINAL EXAMINATIONS:</p> <p>There are no exams in this course</p> <p>EXPECTATIONS FOR WRITING:</p> <p>LATE AND/OR MISSING ASSIGNMENTS:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ 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.

Is a passing grade on a particular component essential to pass the course as a whole? No

COURSE TIMETABLE			
Course Schedule	Topic & Reading	Instructor	Assignments/Due Dates & Times

Date			
January 14 (2020) - 1pm – 2:30pm	Lecture 1: Origins of antibiotic resistance/global resistome	Alexei Savchenko	
January 16 (2020) - 1pm – 2:30pm	Lecture 2: Resistance mechanisms (Part 1) cell envelop, membrane synthesis and integrity	Alexei Savchenko	
January 21 (2020) - 1pm – 2:30pm	Oral presentations by students for topics from Lecture 1	Alexei Savchenko	Written assignments – due by 12 pm
January 23 (2020) - 1pm – 2:30pm	Oral presentations by students for topics from Lecture 2	Alexei Savchenko	Written assignments- due by 12 pm
January 28 (2020) - 1pm – 2:30pm	Lecture 3: Resistance mechanisms (Part 2) DNA/RNA replication, protein synthesis	Alexei Savchenko	
January 30 (2020) - 1pm – 2:30pm	Lecture 4: Emerging strategies for overcoming antibiotic resistance	Alexei Savchenko	
February 4 (2020) - 1pm – 2:30pm	Oral presentations by students for topics from lecture 3	Alexei Savchenko	Written assignments – due by 12 pm
February 6 (2020) - 1pm – 2:30pm	Oral presentations by students for topics from lecture 4	Alexei Savchenko	Written assignments due by 12 pm
February 10 (2020)			Proposals drafts are due by 10 am

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/. 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). 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/ or email ombuds@ucalgary.ca

Student Union: The SU Vice-President Academic can be reached at (403) 220-3911 or 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; 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.