

MDSC BIOL 503
Pharmacology of Organ Systems

Instructors:

Dr. Donna Slater (Coordinator)	dmslater@ucalgary.ca (403 210 7660)
Dr. Stefanie Black	blacks@ucalgary.ca
Dr. William Cole	wcole@ucalgary.ca
Dr. Kyle Flannigan	kyle.flannigan1@ucalgary.ca
Dr. Andy Braun	abraun@ucalgary.ca
Dr. Charlie Kwok	hongting.kwok@ucalgary.ca

Alternate Topic Leads – may be confirmed dependent on availability

Office Hours/Policy on Answering Student Emails

Office hours are available by appointment.

Email communications with the course coordinator and / or TA are welcome. Please email with MDSC / BIOL 503 in the subject line of the message. All efforts will be made to respond to emails received during working hours within 48 hours (excluding weekends and statutory holidays).

Please note that all course communications must occur through your @ucalgary email.

Teaching Assistants:

Ryan Bianchini	ryan.bianchini@ucalgary.ca
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Time and Location:

Monday 11th January – Wednesday April 14th (Term break: week of Feb 15th; no class April 5th (Easter Monday)).

Classes take place Mondays and Wednesdays 5:00pm-6:20pm in Theatre 1

Classes are in person – Zoom links will be also be available.

Teaching will be synchronous to encourage discussion and student engagement.

Prerequisite/Co-Requisite:

Open to students having successfully completed MDSC 501/BIOL 501; OR with consent of the course coordinator (Dr. DM Slater - dmslater@ucalgary.ca)

Course Description:

Through analysis and discussion of research literature, this course explores topics in pharmacology including the nervous, cardiovascular, renal, respiratory and immune systems, as well as anti-cancer therapies.

Overarching Theme

To build on the basic principles of pharmacology introduced in MDSC / BIOL 501, specific emphasis will be based on the analysis, interpretation and critique of select research topics in pharmacology. This advanced modular course will cover several areas of pharmacological research, from historical to modern

investigation, concerning novel drug targets, mechanisms of action and / or therapeutic approaches. The course is designed for senior under-graduate or junior graduate students in the biomedical /biological / biochemical sciences. Course content will be delivered through a series of topics involving Journal Club-style presentations, debate and critical discussion of research papers in the field. Participants should be motivated, enthusiastic, questioning, critical and conversant senior undergraduates or junior graduate students who are prepared to discuss basic science and clinical research papers with different topic leads selected for their expertise.

Global Objectives

- To facilitate development of critical and analytical skills in selected topics in pharmacology
- To create and develop an interactive, supportive, and inclusive learning environment

Course Learning Outcomes

This course expects that an interactive environment for learning will be established to facilitate the ability to analyse, critically appraise and discuss scientific papers, and where appropriate integrating old and new concepts. This will be accomplished through active, class discussion based on lectures, journal club style presentations, short written papers (e.g. lay summary, news & views article, critical synopsis) plus discussion and questions from the audience.

By the end of MDSC / BIOL 503 students will be able to:

1. develop communication skills by leading journal club style presentations, debate, and discussion of scientific / clinical research papers
2. appraise, critically analyze, and discuss basic and clinical research papers
3. assess appropriateness of scientific methods and models in selected research papers
4. engage concepts from lectures and readings to integrate old and new ideas in pharmacology to guide future avenues of study
5. advance skills in the presentation (written and oral) of complex material for a broad audience

Learning Resources

Access to D2L and library resources will be required.

Recommended Textbooks/Readings

There is no assigned textbook for this course. All readings / links to readings will be posted on D2L. Access to library resources will be required.

A Note regarding readings

A list of required readings will be outlined on D2L and links and documents will be made available, where possible. Required readings have been chosen carefully to inform you and enhance the lecture material. **Students are REQUIRED to complete assigned readings BEFORE each class.** Instructors will proceed in class on the assumption that students have read completely the assigned readings. Students should be aware that many of the readings they will be assigned may be of an unfamiliar nature and style. Students should allot sufficient time to allow for several reads of the assigned material.

Learning Technology Requirements

Brightspace (by D2L) is located on the University of Calgary server and will be used extensively for communication with students. **It is the student's responsibility to ensure that they receive all posted communications and documents and that they receive emails sent by instructors or fellow students**

through D2L. Only your @ucalgary.ca email address may be linked to D2L. Please ensure that you are regularly checking your @ucalgary.ca account.

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.

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/>.

Evaluation

The University policy on grading and related matters is described in section F of the 2020-2021 Calendar. In determining the overall grade in the course, the following weights will be used:

Description	% grade	Due Date	LOs
Lay Summary (500 words max)	15%	Jan 27 th before class	2, 5
Journal club presentation	20%	Variable – student assigned papers To be held in class	All
Written Critique on Journal paper	20%	Due 7 days after assigned presentation	All
Journal Club Host	15%	Variable – student assigned papers	All
Written Critique on Host paper	20%	Due 7 days after assigned host	All
Participation and questions	10%	Submit questions before class	All

Rubrics for each component will be provided on D2L.

Assignments:

The purpose of the course assignments is to demonstrate that the students have developed oral and written presentation skills. Through the completion of these assignments, the students will demonstrate their appreciation of the literature and critical skills and ability to integrate and synthesize knowledge. The lay summaries will provide an opportunity to write for a general audience, whilst the written critique articles will provide a more in-depth critical appraisal. Finally, the oral presentations will help the students develop presentation skills (making clear slides, giving a cohesive talk in defined time).

Lay Summary: All students will write a 1-page lay summary (500 words maximum) (on the paper presented by course coordinator on January 27th). Due before class Jan 27th

Journal Club Presentation: Each student will present one journal club style article. Topics/dates will be assigned in discussion with the course coordinator during the first two weeks of class. Slides should be uploaded onto D2L 24 hours prior to the presentation time.

Critique on Journal Club paper: Each student will write two critique articles (600-1000 words)

- (i) One on their journal club paper - due by 11:59pm 7 days following the paper presentation
- (ii) One on their 'host' role paper - due by 11:59pm 7 days following their host session

Journal Club Host: Each student will host one journal club style article. Host will receive student submitted questions, guide and facilitate class discussion. Topics/dates will be assigned in discussion with the course coordinator during the first two weeks of class.

Participation: All students will be engaged and participate in classroom discussions, including ad hoc questions as they arise. Students will prepare 2-3 questions for 1 of the papers in each of the 5 topics. Questions to be submitted via email to journal club host and topic lead by 12:00 noon on the day prior to the presentation. Students will be assigned papers in discussion with course coordinator during first two weeks of class.

All presentation slides and papers to be submitted on D2L dropbox.

There is no final exam for this course.

A passing grade on each component is not essential to pass the course as a whole. However, students who do not complete each component of the course will be considered as not having completed the course; this will be reflected on the students' official transcript as 'Incomplete'. In the absence of medical or other documented reasons, the instructor reserves the right to award an 'Incomplete'.

A Note regarding Writing Assignments:

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 2020-21 Calendar), writing is emphasized, and the grading thereof in determining a student's mark in this course. The Bachelor of Health Sciences values excellence in writing. 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). Sources used in research papers must be properly documented. 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.

Grading Scheme:

Letter Grade	Description	Percentage
A+	Outstanding performance	96-100
A	Excellent performance	90-95
A-	Approaching excellent performance	85-89
B+	Exceeding good performance	80-84
B	Good performance	75-79
B-	Approaching good performance	70-74
C+	Exceeding satisfactory performance	65-69
C	Satisfactory performance	60-64
C-	Approaching satisfactory performance	57-59
D+	Marginal pass	54-56
D	Minimal pass	50-53

F	Did not meet course requirements	0-49
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Missed Components of Term Work:

At the Course Coordinator's discretion, students will lose 5% per day late past the deadline for all assignments). In this case, assignments will **NOT** be accepted more than 72 hours after the posted deadline and students failing to submit any assignment within this time frame will receive a mark of zero. **Exceptions to this policy may be granted on a case-by-case basis.**

Extensions will NOT be granted on any assessed components. The only exceptions to this are those in keeping with the University Calendar (debilitating illness, religious conviction, or severe domestic affliction) that are received in writing and with supporting documentation. Traffic jams and late or full buses are common events in Calgary and are NOT acceptable reasons for late arrivals to class, meetings and examinations. Please note that while absences are permitted for religious reasons, students are responsible for providing advance notice and adhering to other guidelines on this matter, as outlined in the University Calendar (<https://www.ucalgary.ca/pubs/calendar/current/e-4.html>).

Course Evaluations and Student Feedback

Student feedback will be sought at the end of the course through the Universal Student Rating of Instruction (USRI) and a qualitative student evaluation. Students are welcome to discuss the process and content of the course at any time with the instructor. Students may also address any concerns they may have with Dr. Ebba Kurz, Associate Dean (Undergraduate Health and Science Education) in the Cumming School of Medicine (kurz@ucalgary.ca).

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.

Attendance

As 10% of the final mark is based on participation, attendance is required at all timetabled sessions.

Conduct During Lectures

The classroom (whether in-person or virtual) 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>.

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

Use of Internet and Electronic Communication Devices in Class

The Bachelor of Health Sciences program aims to create a supportive and respectful learning environment for all students. The use of laptop and mobile devices is acceptable when used in a manner appropriate to the course and classroom activities. However, research studies have found that inappropriate/off-topic use of electronic devices negatively affects the learning of the user and others during class time.

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-communications-policy.pdf>.

UNIVERSITY OF CALGARY POLICIES AND SUPPORTS

Copyright

All students are required to reach the University of Calgary policy on Acceptable Use of Material Protected by Copyright (<https://www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright-policy.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 unauthorized 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 <https://www.ucalgary.ca/pubs/calendar/current/k.html>.

Instructor Intellectual Property

Course materials created by instructors (including course outlines, presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the instructor. 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 Accommodations

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The Student Accommodations policy is available at <https://ucalgary.ca/student-services/access/prospective-students/academic-accommodations>. Students needing an accommodation based on disability or medical concerns should contact Student Accessibility Services (SAS) in accordance with the Procedure for Accommodations for Students with Disabilities (<https://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities.pdf>). 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.

SAS will process the request and issue letters of accommodations to instructors. For additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/.

Academic Misconduct

The University of Calgary is committed to the highest standards of academic integrity and honesty. The University of Calgary has created rules to govern all its members regarding the creation of knowledge and the demonstration of knowledge having been learned.

Academic Misconduct refers to student behaviour that compromises proper assessment of a student's academic activities and includes (but is not limited to): cheating, fabrication, falsification, plagiarism, unauthorized assistance, failure to comply with an instructor's expectations regarding conduct required of students completing academic assessments in their courses, and failure to comply with exam regulations applied by the Registrar.

For information of the Student Academic Misconduct Policy and Procedures, please visit; <https://ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf>
<https://ucalgary.ca/policies/files/policies/student-academic-misconduct-procedure.pdf>

Additional information is available on the Academic Integrity website at: <https://ucalgary.ca/student-services/student-success/learning/academic-integrity>.

Recording of Lectures

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

Freedom of Information and Protection of Privacy Act

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary

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 I of

the University Calendar. Students must follow the official reappraisal/appeal process and may contact the Student Ombuds' Office (<http://www.ucalgary.ca/ombuds>) for assistance with this and with any other academic concerns, including academic and non-academic misconduct. Students should be aware that concerns about graded term work may only be initiated **within 10 business days** of first being notified of the grade. <https://www.ucalgary.ca/pubs/calendar/current/i-2.html>

MEDIA RECORDING

***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.

Sexual Violence Policy

The University recognizes that all members of the University Community should be able to learn, work, teach and live in an environment where they are free from harassment, discrimination, and violence. The University of Calgary's sexual violence policy guides us in how we respond to incidents of sexual violence, including supports available to those who have experienced or witnessed sexual violence, or those who are alleged to have committed sexual violence. It provides clear response procedures and timelines, defines complex concepts, and addresses incidents that occur off-campus in certain circumstances. Please see the policy available at <https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>

Resources for Support of Student Learning, Success, Safety and Wellness

Student Success Centre	http://www.ucalgary.ca/ssc/
Student Wellness Centre	http://www.ucalgary.ca/wellnesscentre/
Distress Centre	http://www.distresscentre.com/
Library Resources	http://library.ucalgary.ca

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 (<https://www.ucalgary.ca/wellnesscentre/services/mental-health-services>) and the Campus Mental Health Strategy (<http://www.ucalgary.ca/mentalhealth/>).

Student Ombuds' Office

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

BHSc Student Faculty Liaison Committee (SFLC)

The BHSc SFLC, with elected representatives from all majors, serves to raise issues of interest to BHSc students to the program administration, including items pertaining to curriculum, scheduling and events. A list of current representatives can be found on the BHSc website.

Student Union (SU) Information

The SU Vice-President Academic can be reached at (403) 220-3911 or suvpaca@ucalgary.ca; the SU representatives for the Cumming School of Medicine can be reached at medrep1@su.ucalgary.ca or medrep2@su.ucalgary.ca.

Student Success Centre

The Student Success Centre provides services and programs to ensure students can make the most of their time at the University of Calgary. Our advisors, learning support staff, and writing support staff assist students in enhancing their skills and achieving their academic goals. They provide tailored learning support and advising programs, as well as one-on-one services, free of charge to all undergraduate and graduate students. For more information visit: <https://www.ucalgary.ca/student-services/student-success>

Emergency Evacuation/Assembly Points

As part of the University of Calgary Emergency Evacuation plan, students, faculty, and staff should locate the closest Assembly Point in case of Fire Alarm. Safety signage is posted throughout the campus showing the locations and the possible route to these locations. All students, faculty, and staff are expected to promptly make their way to the nearest Assembly Point if the Fire Alarm is activated. No one is to return into campus facilities until an all clear is given to the warden in charge of the Assembly Area. For more information, see <https://www.ucalgary.ca/emergencyplan/building-evacuation/assembly-points>

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.

Class Schedule

The following is a list of topics for class, associated readings, and assignment due dates. Please note that unforeseen circumstances may cause changes to the schedule with respect to the timing of topics and readings. Students will be notified of all changes in a timely manner by way of email and D2L announcements.

All course class activities are synchronous, on the dates below from 5:00 – 6:20pm

Date	Topics and Readings	Instructor	Assignments & Due Dates
Jan 11, M	General introduction to the course Intro to topics and leads	Slater All topic leads	Lecture
Jan 13, W	A Road map to Drug Discovery	Slater / TBD	Lecture
Jan 18 M	Fundamentals of Drug Development	Slater / TBD	Lecture
Jan 20, W	Critical assessment and presentation of primary articles – tips & examples	Slater	Lecture
Jan 25, M	Scientific presentation & critique #1 'the good, the bad & the ugly'	Slater	Lecture
Jan 27, W	Scientific critique #2 'tbc'	Slater / Bianchini	Lecture Lay summary due before class.
Feb 1 M	TOPIC 1 Prevention of preterm labour – molecular mechanisms, clinical trials, and the future of personalized medicine	Slater	Lecture
Feb 3, W	No Class Prep time TBC		
Feb 8, M	Journal Club (JC) - Clinical trials	Slater / Bianchini	Student Led JC
Feb 10, W	JC - Pharmacogenomics	Slater / Bianchini	Student Led JC
Feb 15-19	No Class – Reading Week		
Feb 22, M	TOPIC 2- TBC	Topic lead	
Feb 24, W	5 & 6		Student Led JC
Mar 1, M	7 & 8		Student Led JC
Mar 3, W	9 & 10		Student Led JC
Mar 8, M	TOPIC 3- TBC	Topic lead	
Mar 10, W	11 & 12		Student Led JC
Mar 15, M	13 & 14		Student Led JC
Mar 17, W	15 & 16		Student Led JC
Mar 22, M	TOPIC 4- TBC	Topic lead	
Mar 24, W	17 & 18		Student Led JC
Mar 29, M	19 & 20		Student Led JC
Mar 31, W	TOPIC 5- TBC	Topic lead	
Apr 5, M	No Class Easter Monday		
Apr 7, W	21 & 22		Student Led JC
Apr 12, M	23 & 24		Student Led JC
Apr 14, W	Class wrap up	Slater/Bianchini	