

## MDSC 321 Introduction to Immunology

### Instructors:

Course Coordinator/Instructor

Dr. Craig Jenne HRIC 2C64 220-3471 [cnjenne@ucalgary.ca](mailto:cnjenne@ucalgary.ca)  
<http://www.ucalgary.ca/microinfect/faculty/primary-members/craig-jenne>

### Office Hours/Policy on Answering Student Emails

Please note that all course communications must occur through your @ucalgary email, and I will respond to emails sent via student's @ucalgary emails within 48 hours. If an in-person meeting is needed, due to COVID operating procedures, an appointment must be made and infection control measures must be followed (distancing, masks, etc.)

### Teaching Assistants:

Rachelle Davis	<a href="mailto:rpdavis@ucalgary.ca">rpdavis@ucalgary.ca</a>
Andrew Thorne	<a href="mailto:andrew.thorne@ucalgary.ca">andrew.thorne@ucalgary.ca</a>
Madison Turk	<a href="mailto:madison.turk1@ucalgary.ca">madison.turk1@ucalgary.ca</a>
Adam Ranson	<a href="mailto:ajranson@ucalgary.ca">ajranson@ucalgary.ca</a>

### Time and Location:

Lectures will be conducted online via Zoom. Lectures will be held MWF from 3:00 pm – 3:50 pm. Specific connection instructions and links will be communicated via the Desire2Learn (D2L) interface.

Learning will occur in both synchronous (i.e., real-time Zoom) and asynchronous (i.e., students complete on their own time such as discussion boards, watching videos, etc.) contexts. To best succeed in the course, students are encouraged to participate in the asynchronous learning tasks using the D2L learning environment and synchronous Zoom sessions.

### Prerequisite/Co-Requisite:

BIOL 241 and BIOL 243 OR consent of the instructor.

### Course Description:

This introductory course is designed to expose students to the study of how the immune system encounters, recognizes, and responds to various infectious and pathogenic conditions. Emphasis will not solely focus on how components of the immune system interact with each other to generate an effective host response but also will be placed on how this immune response may be used to generate new therapies for human disease, how evolving and emerging pathogens interact with, and challenge the immune system, and how our knowledge of immunity has impacted society.

## Overarching Theme

This course is designed to introduce students to the study of how the immune system maintains health and prevents disease. Additionally, students will learn about the tools used to study the immune system and basic experimental design. To achieve these goals, students will participate in a series of lectures and a semester-long group project. This initial introduction to immunology will help position students for future courses in microbiology, virology, and advanced immunology.

## Global Objectives

- To introduce a broad array of students to the field of immunology.
- To develop a basic knowledge of immunological terms and concepts
- To encourage students to approach immunological questions from both a basic science and a clinical (human disease) perspective
- To learn about both historically significant and recent advancements/problems in the field of immunology
- To develop the skills needed to critically evaluate and understand topics related to immune function

## Course Learning Outcomes

By the end of this course, students will be able to:

- Describe the characteristics and functions of innate and adaptive immunity
- Understand how immune receptors are generated and how these molecules recognize pathogens
- Develop an understanding of how new pathogens “emerge” and evade the immune system
- Compare and contrast various immune effector mechanisms for the clearance of pathogens
- Understand the consequences of and insufficient or inappropriate immune response
- Understand the concepts and effects of medical interventions such as vaccination and immunotherapy
- Communicate scientific information to a variety of audiences
- Develop a comprehensive understanding of basic laboratory and clinical immune assays
- Identify, understand, extract and synthesis critical information from current literature

## Learning Resources

### Required Textbooks

Murphy, Kenneth, Janeway's Immunobiology 9th edition 2016, Garland Science

### Recommended Textbooks/Readings

*Kindt, et al. Kuby Immunology. 7th Edition 2013. W.H. Freeman & Co.*

## 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:

<b>Midterm Exam</b>	<b>25 %</b>
<b>Science Poster (infographic)</b>	<b>15 %</b>
<b>Small Group Report</b>	<b>25%</b>
<b>Final Exam</b>	<b>35 %</b>

**\*\* MIDTERM EXAM** - This is a closed book exam. This exam will be scheduled for 1h and will consist of a mix of multiple choice and short answer type questions (1-2 paragraphs). Questions will be randomly drawn from a large bank of vetted questions such that each exam will be different.

**\*\* SCIENCE POSTER** - This assignment will take place throughout the middle part of term and will culminate in the generation of a science communication poster (infographic) and a written report justifying the material included and design decisions. This report will be 3 pages, double-spaced. Students will be assigned to small groups in week 3 of the semester and will be responsible for completing the assignment by **November 20<sup>th</sup>**. Changes to these groups will only be made by the course coordinator and only under exceptional circumstances (i.e. group member(s) withdrawing from the course). These assigned groups are designed to get students from various backgrounds working together, bringing together various points of view. Note these groups will be different from those assigned for the Small Group Report.

The science poster assignment is designed to encourage the students to choose a topic of interest and the students are free to choose any aspect of immunology and infectious disease. These science communication posters allow students to expand their learning in areas of personal interest and will allow student to hone communication skills (identify a target audience, determining what material to include, how to present information, how to engage an audience). A minor part of the mark (5 marks) are based on the final poster with the remaining marks (10 marks) based on the written justification document that must accompany the final infographic.

The current course outline contains three special focus blocks; **1) Pandemics and Emerging Disease, 2) Vaccines, 3) Antibody Engineering and Therapies.**

All three special focus areas will be introduced in the first weeks of lectures to provide the students with an overview of the potential topics for further study. Students will then be encouraged to meet early and frequently with the course coordinator to discuss and define potential report topics and will be required to schedule a formal meeting with the course coordinator to finalize a report topic by **the end of the 9<sup>th</sup> week (Nov 8<sup>th</sup>)** of lectures. Additionally, four in-class lecture slots have been reserved for group work. During these time slots, students are expected to report to the lecture room to work with their groups. These in-class group work time slots allow the students direct access to the instructor and TA and will serve to keep the research projects progressing in accordance with expected time-lines. During these four in-class time slots, each group is required to meet with the instructor and an evaluation of these progress meetings will contribute towards the overall grade of the small group report. It is anticipated that an additional 10-12 hours of group study and preparation time would be required to produce a report worthy of a high grade.

As this component of the course requires a written report please refer to the University's Writing Across the Curriculum statement at <http://www.ucalgary.ca/pubs/calendar/current/e-2.html>.

One virtual session will be held during regular lecture hours for groups to seek guidance and mentorship on poster design and background research.

**Science Poster Mark Breakdown** (percentage of final course mark)

- **Submitted Poster 5%** (content (too much vs too little), clarity, engagement, references)
- **Justification 15%** (students will provide a justification document that outlines information considered for the poster, how the message was tailored to the target audience, decisions made and rationale that led to shaping the final document)

**This poster and the justification document are due by 5 pm on Nov 20<sup>th</sup>, 2020.**

**\*\*SMALL GROUP REPORT** - This assignment will take place throughout the term and will culminate in a written report submitted to the course coordinator. This report will be 8-10 pages, double-spaced, in length and will need to be appropriately referenced (references and pertinent figures will be in addition to the 10-page (maximum) report). Students will be assigned to small groups in week 3 of the semester and will be responsible for completing the assignment by the end the lecture schedule. Changes to these groups will only be made by the course coordinator and only under exceptional circumstances (i.e. group member(s) withdrawing from the course). These assigned groups are designed to get students from various backgrounds working together, bringing together various points of view.

The small group report is designed to encourage the students to choose a topic of interest from one of three special focus areas that will be covered in the lecture schedule. The students are free to choose any aspect of immunology from one of these special focus areas and will further their knowledge beyond the scope of the lecture material (i.e. new frontiers in immunology, the impact of specific advances on society as a whole, the impact of a changing society/climate on immunological challenges).

These special focus topics form the basis of small interchangeable lecture blocks that will be presented as self-contained modules. These modules will allow for the lecture material to venture beyond the

scope of the textbook. By incorporating material from other sources, we will be better able to demonstrate how immunology impacts and integrates into many aspects of society. Emphasis will be placed on how society perceives immunology and how advances in immunology will shape medical treatments and society as a whole.

The current course outline contains three special focus blocks; **1) Pandemics and Emerging Disease, 2) Vaccines, 3) Antibody Engineering and Therapies.**

All three special focus areas will be introduced in the first weeks of lectures to provide the students with an overview of the potential topics for further study. Students will then be encouraged, using virtual platforms, to meet early and frequently with the course coordinator to discuss and define potential report topics and will be required to schedule a formal meeting with the course coordinator to finalize a report topic by **the end of the 9<sup>th</sup> week (Nov 6<sup>th</sup>)** of lectures. Additionally, three lecture slots have been reserved virtual check in and mentorship for group work. During these time slots, students are expected to join the Zoom session during their assigned timeslot to discuss progress with the instructor/TA. These virtual meetings allow the students direct access to the instructor and TA and will serve to keep the research projects progressing in accordance with expected time-lines. During these three virtual time slots, each group is required to meet with the instructor and an evaluation of these progress meetings will contribute towards the overall grade of the small group report. It is anticipated that an additional 10-12 hours of group study and preparation time would be required to produce a report worthy of a high grade.

Students will select a topic that corresponds to a special focus area but will be expected to expand their selected topic beyond the scope of the course text and lectures. Potential research topics might include;

#### **Pandemics and Emerging Disease**

- Critical review of the response to/ public perception of the recent H1N1 pandemic.
- Re-emerging diseases (polio, TB)
- Effect of climate change or population demographics on pathogen/disease distribution
- Linkage between developed societies and autoimmunity

#### **Vaccines**

- Compare/contrast vaccine strategies
- Public perception of vaccines (H1N1, MMR and Autism)
- Effect of vaccination on disease patterns (chicken pox and shingles)
- Vaccination and the development of the modern society (cities, population density, etc)

#### **Antibody Engineering**

- Development of therapeutic antibodies (successes and failures)
- Use of non-classical Ab structures from non-rodent/non-primate species
- Immunotoxins
- Antibody mediated immunomodulation

This small group report will require the students to search and access primary literature in addition to current press and historical information on their topic of interest. Part of the mark attributed to the written report will reflect how well the students utilize material external to what is covered in the course lectures.

As this component of the course requires a written report please refer to the University's Writing Across the Curriculum statement at <http://www.ucalgary.ca/pubs/calendar/current/e-2.html>.

Furthermore, as this assignment is a group task, the students will be asked to evaluate their working group peers. This mark, although small (5% of the overall course mark) represents a significant portion of the assignment mark (25%) and will help ensure all members in the group contribute to the final report. **Additionally, this peer review mark will be used to determine what percentage of the overall Small Group Report mark (In-class progress meetings and final report) each student receives (see below).**

**Small Group Report Mark Breakdown** (percentage of final course mark)

- **In-class Progress Meetings 5%** (mark assigned to all students in the group by the course coordinator)
- **Final Report 15%** (mark assigned to all students in the group by the course coordinator)
- **Peer Evaluation 5%** (Rubric is appended to the end of this course outline. The rubric scores student performance out of 20, a mark for each student will be averaged from the mark assigned by the other members of their group and scaled to be out of 5 (i.e. 16 out of 20 = 4). **NOTE: A peer evaluation of 0 will NOT be accepted as a mark unless concerns are expressed by the group prior to the report deadline (i.e. concerns must be raised with the TAs or the Instructor during one of the in class group work sessions)**)

If a student's peer evaluation mark is  $>2$  they will receive 100% of the group assignment mark

If a student's peer evaluation mark is  $>1$  and  $\leq 2$  they will receive 75% of the group mark

If a student's peer evaluation mark is  $>0$  and  $\leq 1$  they will receive 50% of the group mark

If a student's peer evaluation mark is 0 they will receive 0% of the group mark

**These small group reports are due by 5 pm on the final day of lecture, Dec 9<sup>th</sup>, 2020.**

**\*\*FINAL EXAM** - There will be a final exam scheduled by the Registrar's office. This exam will follow a similar format to the midterm exam. The final exam will be a closed book exam and will be scheduled for 2h. This exam will consist of a mix of multiple-choice questions and short essay type questions (3-4 paragraphs) drawn from a large question bank. The final exams will be cumulative but will be focused on the material covered after the second midterm exam. Calculators are permitted if needed.

**\*\*FINAL GRADES** - Each piece of work (small group report, midterm examination or final examination) submitted by the student will be assigned a percentage score. The student's average percentage 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. Only the final average grade will be used in determining pass/fail for this course.

#### **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

#### Missed Components of Term Work:

**Students will lose 10% per day late past the deadline for all assignments.** Additionally, **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. **Students who miss a midterm exam will receive a mark of zero unless the instructor has been previously notified. There will be NO exceptions to this policy.**

It is the agreement of all Faculty and Staff involved in MDSC321 that extensions will NOT be granted on any assignment or quizzes. The only exceptions to this are those in keeping with the University Calendar (illness, 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](mailto: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**

Attendance for all lectures is strongly recommended.

## **Conduct During Lectures**

The classroom (even when 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 in the classroom negatively affects the learning of 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/](http://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 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.

### **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	<a href="http://www.ucalgary.ca/ssc/">http://www.ucalgary.ca/ssc/</a>
Student Wellness Centre	<a href="http://www.ucalgary.ca/wellnesscentre/">http://www.ucalgary.ca/wellnesscentre/</a>
Distress Centre	<a href="http://www.distresscentre.com/">http://www.distresscentre.com/</a>
Library Resources	<a href="http://library.ucalgary.ca">http://library.ucalgary.ca</a>

## **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/](http://www.ucalgary.ca/ombuds/) or email [ombuds@ucalgary.ca](mailto: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 [suypaca@ucalgary.ca](mailto:suypaca@ucalgary.ca); the SU representatives for the Cumming School of Medicine can be reached at [medrep1@su.ucalgary.ca](mailto:medrep1@su.ucalgary.ca) or [medrep2@su.ucalgary.ca](mailto: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

Week	Day	Month	Date	Topic	Instructor
1	Wed	Sep	9	Introduction	
	Fri	Sep	11	Immunity - define, describe, history, evolution	
2	Mon	Sep	14	<b>Break Out Groups – Why Immunology?</b>	CJ & TAs
	Wed	Sep	16	Overview of special focus topics and expectations for group report	
	Fri	Sep	18	Innate vs. Adaptive	
<b>3 (groups assigned)</b>	Mon	Sep	21	Humoral vs. Cellular	
	Wed	Sep	23	Innate - Barriers (skin, mucosa, commensal, anti-microbial molecules)	
	Fri	Sep	25	Innate - Pathogen Recognition	
4	Mon	Sep	28	Innate – Cells	
	Wed	Sep	30	Innate – Mechanisms	
	Fri	Oct	2	<b>Term Paper Group Chat – 1</b>	CJ & TAs
5	Mon	Oct	5	<b>Pandemics and Emerging Disease</b>	<b>Special Focus Topic I</b>
	Wed	Oct	7	<b>Pandemics and Emerging Disease</b>	
	Fri	Oct	9	<b>Pandemics and Emerging Disease</b>	
6	<b>Mon</b>	<b>Oct</b>	<b>12</b>	<b>Thanksgiving – no class</b>	
	Wed	Oct	14	<b>Break Out Groups – Innate Review</b>	CJ & TAs
	Fri	Oct	16	Science Communication	
7	Mon	Oct	19	<b>Vaccines - what are they, how do they work?</b>	<b>Special Focus Topic II</b>
	Wed	Oct	21	<b>Vaccines - how do you make them?</b>	
	Fri	Oct	23	<b>Vaccines - impact on society</b>	
8	Mon	Oct	26	Antigens	
	Wed	Oct	28	<b>Term Paper Group Chat – 2</b>	CJ & TAs
	Fri	Oct	30	<b>Midterm Exam – 25%</b>	
<b>9 (paper topic Nov 6)</b>	Mon	Nov	2	Adaptive Immunity - pathogen recognition	
	Wed	Nov	4	Adaptive Immunity - pathogen recognition	
	Fri	Nov	6	<b>Poster Group Chat</b>	CJ & TAs
10	<b>Mon</b>	<b>Nov</b>	<b>9</b>	<b>Reading Days</b>	
	<b>Wed</b>	<b>Nov</b>	<b>11</b>	<b>Reading Days</b>	
	<b>Fri</b>	<b>Nov</b>	<b>13</b>	<b>Reading Days</b>	
<b>11 (poster Nov 20)</b>	Mon	Nov	16	<b>Antibodies – structure and function</b>	<b>Special Focus Topic III</b>
	Wed	Nov	18	<b>Antibodies – structure and function</b>	
	Fri	Nov	20	<b>Antibodies as a tool /therapy</b>	
12	Mon	Nov	23	Experimental Models	
	Wed	Nov	25	<b>Break Out Groups – Experimental Design</b>	CJ & TAs
	Fri	Nov	27	Complement	
13	Mon	Nov	30	<b>Term Paper Group Chat – 3</b>	CJ & TAs
	Wed	Dec	2	T cell receptor / MHC - structure and function	
	Fri	Dec	4	T cell receptor / MHC - structure and function	
<b>14 (paper Dec 9)</b>	Mon	Dec	7	Autoimmunity/Transplant	
	Wed	Dec	9	<b>Break Out Groups – Semester Review</b>	CJ & TAs
				<b>Final Exam- 35%</b>	

**Peer-evaluation Rubric:**

Peer evaluation is an important part of your participation grade. You must fill in one evaluation per group member for each presentation. Students will receive only an average group rating and will NOT be aware how each team member rated them.

Use the following criteria for evaluating your group members:

Category	4	3	2	1
<b>Responsibility and Engagement</b>	Performs all assigned duties and does work without being reminded. Attends all meetings on time.	Performs nearly all assigned duties and/or rarely needs reminding. Attends all meetings on time.	Performs few assigned duties and/or often needs reminding. Attends most meetings, sometimes late.	Does not perform assigned duties and relies on others to do the work and/or does not attend meetings.
<b>Quality of Contributions</b>	Routinely provides useful ideas when participating in the group and in classroom discussion. A definite leader who contributes a lot of effort. Provides work of the highest quality.	Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard. Provides high quality work.	Sometimes provides useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required. Provides work that occasionally needs to be checked/redone by other group members to ensure quality.	Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate. Provides work that usually needs to be checked/redone by others to ensure quality.
<b>Time-management</b>	Routinely uses time well throughout the project to ensure things get done on time. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.	Usually uses time well throughout the project, but may have procrastinated on one thing. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.	Tends to procrastinate, but always gets things done by the deadlines. Group does not have to adjust deadlines or work responsibilities because of this person's procrastination.	Rarely gets things done by the deadlines AND group has to adjust deadlines or work responsibilities because of this person's inadequate time management.
<b>Cooperation</b>	Never argues. Provides constructive criticism when appropriate. Is never publicly dismissive of the project or the work of others. Responds positively to feedback.	Rarely argues unproductively. Sometimes provides constructive criticism when appropriate. Rarely is publicly dismissive of the project or the work of others. Responds positively to feedback.	Sometimes argues unproductively. Occasionally is publicly dismissive of the project or the work of other members of the group. May not respond positively to feedback.	Usually argues unproductively. Often is publicly dismissive of the project or the work of other members of the group. Does not respond to feedback positively.
<b>Working with Others</b>	Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.	Usually listens to, shares, with, and supports the efforts of others. Does not cause "waves" in the group.	Often listens to, shares with, and supports the efforts of others, but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others. Often is not a good team player.

Adapted from: MDSC308 and Carver TL, Stickley A: Teamwork in First Year Law Units: Can It Work? Journal of University Teaching & Learning Practice. 2012, 9:1-33.

**Peer-evaluation Form:**

Your Name:

Group number:

	NAME	Responsibility and Engagement	Quality of Contributions	Time-management	Cooperation	Working with others	TOTAL (/20)
Group member							
Group member							
Group member							
Group member							

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