

MICR303: IMMUNOLOGY
COURSE OUTLINE SUMMER 2020

INSTRUCTOR

Dr. Catherine Bachewich

Sessional Lecturer, Department of Biochemistry and Microbiology, University of Victoria
Affiliate Associate Professor, Department of Biology, Concordia University, Montreal, QC

EMAIL: cbachewich@uvic.ca

COURSE OBJECTIVES

This course provides an overview of the mammalian immune system and its function during health and disease. Students will learn the key components of the immune system, how diverse pathogens or substances are recognised, how pathogen-specific effector responses are generated, how immunological memory is generated, how immune responses are kept in check, how inappropriate immune responses can lead to disease, and how the immune system can be harnessed therapeutically. Examples of experimental approaches used to probe the function of the immune system will be included throughout the course.

TEXTBOOK: Janeway's Immunobiology, 9th Edition.

LECTURE FORMAT:

Lectures will be **pre-recorded and posted on CourseSpaces** before lectures days (Monday, Thursday). Lectures will consist of a recorded Zoom session that includes Powerpoint presentations, videos, and verbal descriptions of material. Notes are arranged by topic, and a single topic may span multiple lectures. *Not all material will be written down in the notes; some points will be highlighted in a verbal manner.* Students are responsible for synthesizing all materials covered in the course presentations.

Synchronous class discussions for review and questions will take place most **Mondays and Thursdays each week from 9:30-10:30** via the Zoom link posted on CourseSpaces (also see detailed schedule for live sessions posted on CourseSpaces). Students are expected to review the posted lecture material prior to these sessions. Synchronous class participation is strongly recommended. The sessions will be recorded and posted on CourseSpaces. The live sessions will include an overview of concepts presented in recorded lectures, and questions/exercises. Students will sign into the Zoom link via their UVIC ID. Student video and audio can be turned off during the recorded live sessions for anonymity, but names will appear. Questions can be asked via the Chat function for anonymity, or by turning on the audio/video.

OFFICE HOURS:

Mondays and Thursdays, 10:30-11:30 after the live class sessions, via an appointment at a different time, or via email.

COURSE CONTENT*

1. Introduction to the Immune System	Principles of innate and adaptive immunity (Ch.1)
2. Innate Immunity	Anatomical barriers; antimicrobial peptides complement; innate cell types and effector mechanisms; pattern recognition. (Ch. 2,3)
3. Adaptive Immunity	Antigen and antigen-presentation; generation of lymphocyte antigen receptors; T cell activation; T cell subsets and effector mechanisms; antibodies and antibody production.

	(Elements of Ch. 4,5,6,7,9,10)
4. Immunological memory	Memory B/T cells (Ch. 11)
5. Vaccination	Example composition, methods (Ch. 16)
6. Generation of tolerance and regulatory mechanisms	B, T cell development, central and peripheral tolerance and mechanisms preventing auto-reactivity (Ch. 8)
7. Autoimmunity	Disorders associated with the immune system attacking self; underlying factors, including defects in tolerance. (Ch. 15)
8. Immunity at mucosal surfaces	Immunology of the mucosal system and host-microbiota interactions. (Ch.12)
9. Hypersensitivity and Allergy	Allergy and allergic diseases; relationship with the microbiota (Ch. 14)
10. Immunity to infectious pathogens and pathogen evasion strategies	Immune responses to select bacterial, parasitic and viral pathogens; mechanisms by which pathogens evade the immune system. (Ch. 13)
11. Tumor immunology	Tumor immune environment, immunotherapy

**a single topic may span several lectures*

ASSESSMENT OF STUDENT PERFORMANCE

(1) Techniques to be used:

- Grading of multiple choice, matching, short answer and longer answer questions on exams and quizzes, and assignment of a numerical mark to each question.
- Exams are based on material covered in lectures and synchronous sessions (slides, whiteboard, discussions). Lectures are based on information from the text and other sources. Textbook reading is recommended to reinforce information discussed in class, and to provide additional details for those that are interested. Students will not be examined on information in the textbook or on other source material that is not covered in class.
- Quizzes will be completed online via CourseSpaces. Quizzes will be timed; once the exercise is initiated on CourseSpaces, it will have to be completed within a designated period of time. However, a 24 h window will be provided to allow flexibility for initiation of the quizzes.
- Exams will be given a set 24 h open time block for completion.
- Quizzes and Exams are “open-book”, but students are expected to study as if they were writing in class in order to complete the exams within the designated time frame and not spend the majority of time searching for answers. Students are obligated to write exams and quizzes on their own, without the assistance of others.

(2) Evaluation and weighting:

Component	Date	Contribution
Midterm I	May 25	20%*
Midterm II	June 8	20%
Final Exam	June 25	40%
Quizzes	May 21 June 1 June 18	20%

**Of the 2 midterms: the lowest and highest grade will contribute 15 and 25 marks, respectively*

(3) Grading Scheme:

A ⁺	90 - 100	B ⁺	77 - 79	C ⁺	65 - 69	F	< 50
A	85 - 89	B	73 - 76	C	60 - 64	N*	< 50
A ⁻	80 - 84	B ⁻	70 - 72	D	50 - 59		

* N grades

Students who have completed the following elements will be considered to have completed the course and will be assigned a final grade: **Midterm 1, Midterm 2, at least 2 quizzes, and the Final Exam.**

Failure to complete one or more of these elements will result in a grade of "N" regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student's GPA as 0. The maximum percentage that can accompany an N on a student's transcript is 49.

Students are responsible for ensuring that they are properly registered in the course, and are expected to have met all pre/co-requisites for the course.

DEPARTMENT INFORMATION AND POLICIES

1. The Department of Biochemistry and Microbiology upholds and enforces the University's policies on academic integrity. These policies are described in the current University Calendar. All students are advised to read this section.
2. Cell phones, computers, and other electronic devices must be turned off at all times during live class sessions unless being used for a purpose relevant to the class.
3. Any recordings of live class sessions may only be performed with written permission of the instructor, and are for personal use only. The instructor retains copyright to such recordings and all lecture materials provided for the class (electronic and otherwise); these materials must not be shared or reposted on the Internet.
4. Course materials, such as notes, problem sheets, quizzes, examinations, example sheets, or review sheets, may not be redistributed without the explicit written permission of the instructor.
5. Students are expected to be available for all exams. Instructors may grant deferrals for midterm examinations for illness, accident, or family affliction, and students must provide appropriate documentation 48 hours after the midterm exam. The Department of Biochemistry and Microbiology considers it a breach of academic integrity for a student taking a deferred

examination to discuss the exam with classmates. Similarly, students who reveal the contents of an examination to students taking a deferred examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar). Deferral of a final exam must be requested with an Academic Concession form and submitted directly to Undergraduate Records. Deferred final exams for fall term courses will be arranged by the instructor. Deferred final exams for spring term courses will be arranged through Undergraduate Records and must be written before the end of the summer term as stipulated in the University Calendar.

6. Requests for review/remark of a midterm exam must be made within one week of the exam being returned.
7. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.
8. Supplemental exams or assignments will not be offered to students wishing to upgrade their final mark.
9. Anonymous participation in online classes is not permitted without written permission of the instructor.

Centre for Accessible Learning

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, approach the Centre for Accessible Learning (CAL) as soon as possible in order to assess your specific needs.

<https://www.uvic.ca/services/cal/index.php>

Course Experience Survey (CES)

We value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future. When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to your [CES dashboard](#). You will need to use your UVic NetLink ID to access the survey, which can be done on your laptop, tablet or mobile device. I will remind you nearer the time but please be thinking about this important activity.