



University
of Regina



Faculty of
Science

BIOL 399AF – Fundamentals of Immunology

Winter 2026

Territorial acknowledgement: The University of Regina is situated on the territories of the nêhiyawak, Anihšināpēk, Dakota, Lakota, and Nakoda, and the homeland of the Métis/Michif Nation. The Regina campus is on Treaty 4 lands, and Saskatoon classes are on Treaty 6 lands.

Course Instructor: Dr. Ahmed Khairalla

Office: RIC 326

Office phone: (306) 585-5224

E-mail: Please send emails via UR Courses internal email function **only**.

Lectures: The class will be delivered face-to-face: TR 01:00 pm - 02:15 pm.

Lecture room: Classroom Building, Room 317 (CL 317)

Office hours: Dr. Khairalla is available, and students are welcome to stop by whenever their office door is open. Additionally, appointments with instructors can be scheduled via email. Students are encouraged to ask questions at any time!

Course summary and Objectives

Course Description

This course will help students to gain an effective understanding of the immune system, its components, and its functions in defending the body against pathogens and diseases. It explores the fundamental principles of immunology, including the roles of innate and adaptive immunity, their components, their communication, and their contributions to the body's natural immune response. The course will also highlight the mechanisms that can trigger the development of immune-related disorders.

Course Objectives

1. Students will develop a general understanding of the immune system.
2. Students will develop the ability to recognize the main components of the immune system and to understand the dynamic interplays between these components, including the organs (e.g. bone marrow, thymus, lymph nodes, spleen, tonsils), cells (e.g., B cells, T cells, macrophages, dendritic cells), and proteins (e.g., antibodies, cytokines).
3. Students will develop strong knowledge of immunological principles, such as the ability to differentiate between self- and non-self-antigens, immunological memory, the ability to limit the response after an infection has been cleared.
4. Students will develop their knowledge of immunological disorders, such as allergies, and hypersensitivity reactions, and understand the underlying mechanisms and clinical implications.

Mode of Instruction and Teaching Strategies

- **Class Delivery**

All lectures will be delivered in person, via face-to-face instruction at the UofR main campus, with a strong emphasis on student participation and problem solving.

- **Term Tests and Quizzes**

To assess student learning, there will be quizzes on the dates indicated on the syllabus.

There will be 3 term tests in this course. These three tests will be held in-person, during the scheduled class time (the dates are on the lecture schedule; page 5).

Course Expectations and Policies

- **Attendance Policy**

Lecture attendance is strongly recommended for optimal learning. Attendance is required for quizzes, term tests and make-up test (if needed).

- **Lecture Expectations**

Every student is expected to be prepared for each class by having read all course materials and prepared the cases and / or quizzes. Also, everyone is also expected to participate fully in class, contributing to your peers and your own learning. Please be familiar with this Course Outline and its requirements.

- **Recording of Materials**

The lectures will not be recorded due to student privacy concerns, and you may not record any portion of a lecture (either in audio or visual formats) without the prior and explicit written permission of the lecturer.

- **Contacting Instructor**

Students are encouraged to contact the instructor if they have any questions regarding the course or its content, and an appointment can be set up if needed. The preferred method of communication in this course is through the UR Courses Internal email function. Please do not send emails to personal URegina email address during the semester and don't send URCourses "Messages" (chat) (Please refer for the illustration below). Please be patient. Allow a reasonable amount of time to receive a response back – usually 24 hours during the week and longer during weekends.



- **Technical Support**

Contact IT Support for any technical assistance (IT.Support@uregina.ca or 306.585.4685).

Required Materials/ Resources

- **Course Website**

A UR Courses site is available for this course and will be continually updated with lecture outlines and supplementary material. Login at <https://urcourses.uregina.ca/login/index.php> using your uregina.ca username and password.

Please visit UR Courses before every class to ensure you have updated information and access to any extra resources. I regularly post messages on URCourses.

- **Textbook**

No textbook is required for this course, and a multitude of resources that will help you to study the concepts covered in the course will be uploaded to the UR Courses website.

Evaluation

You must achieve at least 50% to pass the course. The mark distribution is as follows:

Assessment	Value	Notes
Term Test #1 (Feb 3)	30%	Covers topics 1-5, 75 minutes
Term Test #2 (Mar 12)	30%	Covers topics 6-9, 75 minutes
Term Test #3 (Apr 2)	25%	Covers topics 10-13, 75 minutes
Quizzes (5 out of 7 × 3 %)*	15%	*Only the highest 5 quizzes will count towards your final mark
MAKE-UP TEST		<p>Tuesday, April 7, during lecture time</p> <p>The make-up test will ONLY be provided in extenuating circumstances with documented evidence of the circumstances provided to the course instructor immediately and is evaluated on a case-by-case basis. The content and format of the make-up test will be the same as the test that was missed.</p>

* There will be a total of 7 quizzes, beginning in week 2. The top 5 quiz scores will be used to calculate your final grade. This approach allows for flexibility, offering forgiveness for up to 2 missed quizzes (e.g., due to illness or other unforeseen circumstances) or for underperforming on up to 2 quizzes (as we all have off days). No make-up quizzes will be permitted, so it's important to plan ahead and take the quizzes as scheduled.

Policies and Procedures for Marks and Term tests

- This course **does not have a final exam**.
- In addition to **quizzes**, there will be **three term tests**, all held in **Classroom Building, Room 317 (CL 317)** during the scheduled class time (01:00 pm - 02:15 pm).
- The term tests and quizzes are to be completed individually and are **NOT open book**.
- The **term tests** are **not cumulative** in terms of specific questions, but you are expected to understand and make connections to concepts covered in previous evaluations.
- Since they are non-cumulative, the term tests cannot replace each other (in other words, **all students are expected to write all three term tests**).

- **Missing a quiz will result in a grade of zero for the quiz.**
- If a student misses a term test, the student must email the instructor immediately (within **48 hours**) explaining the situation and providing any necessary documentation.
- The **make-up test will ONLY be offered in extenuating circumstances** (e.g., urgent medical appointments, personal emergencies, counseling, or a funeral). Clear, dated documentation of the circumstances must be provided to the course instructor within **48 hours of the scheduled test date, including weekends, not just workdays**. The request will be evaluated on a case-by-case basis.
- **Make-up test(s) for approved students will be held on April 7, during lecture time.**
- **If a student misses a term test and does not receive approval or fails to contact the instructor within 48 hours of the scheduled test time (including weekends), a grade of 0% will be assigned for that test.**
- **“Deferred” final exams can only be granted by the Associate Dean, Academic** (for Faculty of Science students), or by the Deans and/or Associate Deans of other Faculties or Federated Colleges. Course instructors cannot grant deferred final exams.

- **Grades posted on URCourses are provisional and unofficial.** They are subject to review and approval and may change after final assessment.
- Final marks for the course are based on a total assessment of each student's record. **It is a student's responsibility to make sure that their marks are complete and correct.**

- If there is an issue with one of your grades, you must notify the instructor in writing using the **Grade Re-evaluation Request Form** (the form can be accessed by using the UR Courses website). The completed form **MUST** be sent in an email to the course instructor **within 7 days** of receiving the grade. Please do not resubmit it to the UR Courses website.
- Students have **20 business** days from the date they receive their grade **to initiate an appeal**. Please refer to the **Academic Calendar** for specific procedures:
<https://www.uregina.ca/registrar/assets/docs/pdf/calendar/2025-2026.pdf>
- This course falls under the Academic Regulations of the University of Regina and the Faculty of Science (these regulations are printed in the General Calendar, available at <https://www.uregina.ca/student/registrar/resources-for-students/academic-calendars-and-schedule/undergraduate-calendar/index.html>)

- **All students' course grades are determined based on the same graded components and consistent rubric.** Individual grades will not be adjusted on an arbitrary basis.
- **The grading scheme for the course is the same for all students in the course.** There is no opportunity to boost a grade by doing “extra work”, and there are no adjustments to grade allocations for the various tests.
- There are **no alternative assignments** that can be completed by students for the purpose of increasing their final grade.
- **The value of a term test or a quiz cannot be transferred to any other course component.**
- **Term tests and quizzes cannot be retaken** under any circumstances.
- **The minimum passing grade for this course is 50%.**

Important Dates

Jan 6	First day of the Winter term
Feb 3	Term test # 1
Feb 16-22	Winter Break (no classes)
Mar 12	Term test # 2
Apr 2	Term test # 3
Apr 7	Make-up test (if needed)
Apr 16-29	Final examination period. BIOL 399AF will not have a final exam.

Tentative Lecture schedule

This is a tentative schedule. All dates and topics are subject to change as conditions dictate.

Date	Topic*	Quizzes
Overview of the Immune System		
Jan 6	Introduction to the course + Topic 1: Overview and Elements of the Immune System	
Jan 8	Topic 1: <i>cont.</i> Topic 2: Barrier Defenses & Proteins of the Innate Immune System	
Jan 13	Topic 2: <i>cont.</i>	
Jan 15	Topic 3: Cells of the Innate Immune System	Quiz 1, Jan 15, during class time, Topics 1-2
Jan 20	Topic 4: Antibodies and Antigens	
Jan 22	Topic 4: <i>cont.</i>	
Jan 27	Topic 5: Generation of Antibody Diversity	Quiz 2, Jan 27, during class time, Topics 3-4
Jan 29	Topic 5: <i>cont.</i> Topic 6: B Cell Development and Selection	Quiz 3, Jan 29, during class time, Topic 5
Feb 3	Term test #1 (Topics 1-5) (In-person during class time)	
Feb 5	Topic 6: <i>cont.</i>	
Feb 10	Topic 7: T Cell Receptors and MHC Molecules	
Feb 12	Topic 7: <i>cont.</i>	
Feb 16-22	WINTER BREAK (no classes)	
Feb. 24	Topic 8: Antigen Presentation	Quiz 4, Feb 24, during class time, Topics 6-7
Feb 26	Topic 8: <i>cont.</i>	
Mar 3	Topic 9: T Cell Maturation, Activation, and Differentiation	
Mar 5	Topic 9: <i>cont.</i>	
Mar 10	Topic 9: <i>cont.</i>	Quiz 5, Mar 10, during class time, Topics 8-9
Mar 12	Term test #2 (Topics 6-9) (In-person during class time)	
Mar 17	Topic 10: B Cell Activation and Differentiation	
Mar 19	Topic 10: <i>cont.</i>	
Mar 24	Topic 11: The Race Between Immunity and Infection	Quiz 6, Mar 24, during class time, Topics 10-11

Immune Disorders and Immune Therapy		
Mar 26	Topic 12: Hypersensitivity	
Mar 31	Topic 13: Transplantation	Quiz 7, Mar 31, during class time, Topics 12-13
Apr 2	Term test #3 (Topics 10-13) (In-person during class time)	
Apr 7	Make-up test (if needed)	
Apr 9	-	
Apr 16 – Apr 29 Final examination period	BIOL 399AF will not have a final exam.	

* This schedule is tentative and may be subject to change as required

Important Note

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If any modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the students to check their UofR email and UR Courses website weekly during the term and to note any changes. Changes will be communicated through regular communication channels, such as UR Courses website and/or UofR email.

Late submission of work/missed exam policy: Late submission of work will earn zero and will not receive feedback. If you miss a test, contact the instructor immediately and provide valid documentation. Deferred final exams are granted only by the Associate Dean, Undergraduate (for Faculty of Science students), or by the Deans and/or Assistant Deans of other Faculties or Federated Colleges. There are no exceptions.

Academic integrity: Academic integrity requires students to be honest. Quizzes and exams are to help students learn; grades show how fully this goal is attained. Thus, all work and grades should result from a student's own understanding and effort.

Students are expected to complete assignments, tests, and other academic evaluations using their own knowledge and abilities. The use of generative AI tools, including but not limited to ChatGPT, is considered a breach of this expectation.

Acts of academic misconduct violate academic integrity and are considered serious offences by the University. Examples include, but are not limited to, cheating on tests or exams, plagiarizing, copying from others, falsifying lab results, etc. Instances of academic misconduct will be reported to the Associate Dean Academic for investigation. Similarly, any use of generative AI tools in academic work is considered academic misconduct and will be reported to an investigating Dean. Full details are provided in the [Undergraduate academic calendar](#). Students are encouraged to understand their obligations as a student, as well as their rights.

Accommodation: Students in this course who may have need for specialized accommodation should contact the Centre for Student Accessibility (Riddell Centre 229, 585-4631), and must discuss their accommodation letter with their instructor.