Immunology
UNIVERSITY OF TORONTO

IMM433 2024-2025
NeuroImmunology

Course & Instructor Information

Course Coordinator & Instructor
Dr. Chao Wang, chao.wang@sri.utorotno.ca
Office Hours: Mondays, 1-3pm (by appointment only)

Teaching Assistants
TBA

Lecturers

Chao Wang chao.wang@sri.utoronto.ca
Sébastien Talbot sebas.talbot@gmail.com
Olga Rojas Olga.Rojas@uhn.ca
Julien Muffat julien.muffat@utoronto.ca
John Lukens jrl7n@virginia.edu
Veronique Miron Veronique.Miron@unityhealth.to
Martin Profant martin.profant@mail.utoronto.ca

Arts & Science Calendar Course Overview (24L)

This course will provide students with an opportunity to advance their understanding of the emerging interdisciplinary research in Neuroimmunology. Topics covered include neural regulation of immune cells and lymphoid organs, and the reciprocal immune mediated regulation of the central and peripheral nervous system. An in-depth analysis of microglial cells, meningeal immunity, as well as peripheral immunity will be discussed in the context of cancer, allergy, neurodevelopmental and neurodegenerative diseases.

Prerequisites: IMM350H1/IMM351H1

Course Learning Outcomes

- Understand key experimental evidence for supporting molecular interactions between neural and immune cells in both the central and peripheral nervous systems
- Learn about the cell types and structures that support neuroimmune regulation of human disease
- Cultivate collaborative skills through group work with peers and/or teaching assistants through preparation of presentations
- Engage in oral scientific communication through presentations

Required Readings

There is no required textbook for this course. All required papers/content will be posted Quercus (information below) and should be read **prior** to attending the tutorials.

Evaluation Scheme & Course Assessments

Assessment	% of Grade	Due Date
	IMM433	
Midterm Test	40%	Feb 13, *in class (Location: TBD)*
Final Exam	40%	TBD, *in class (Location: TBD)*
Participation (Presentation; IMM433)	20%	March 27 & April 3, *in class*

*** Course Drop Dates: March 10, 2025 for IMM433*

1. Midterm Test (40%)

The midterm test will take place on Feb. 13, during class time (3:10-5:00pm). It will cover lectures 1-5 and will include 10-12 short answer questions.

Refer to the "Missed Assessment Policy" section below for information on how to request accommodation for a missed test and what accommodations may be possible.

2. Final Exam (40%)

The date and location of the Final Assessment will be scheduled by the Faculty of Arts and Science. It will be scheduled for 2 hours and will cover lectures 6-9 including 10-12 short answer questions.

Final exam conflicts and petitions for a deferred exam must be brought to the Faculty of Arts and Science.

3. Participation (IMM433H1 students only, 20%)

The last two class sessions will be devoted to student group presentations of specific topics in neuroimmunology, focusing on emerging questions in the field, translational implications, and ways to address them. Student teams will be assigned to a topic (following the week of the midterm test) and will prepare a brief presentation (10-15 mins) highlighting the important issues based on the current understanding, and then outline several key unanswered questions and/or potential applications for discussion (3-5 mins).

All students are expected to contribute to this and regular class discussions, and extra credit may be earned for consistent high-level participation.

*Due to the nature of this assessment (i.e. a group project, live presentation), there will be **no extensions** on the participation under any circumstances (see Missed Assessment Policy).*

Missed Assessment Policy

- This course follows the University of Toronto's Policies on missed tests and assignments, and requires students to complete an Absence Declaration on ACORN for illness-related circumstances. Your Absence Declaration must be accompanied by a Verification of Illness (VOI) form if applicable, and you must report your absence to the course coordinator, Dr. Chao Wang, by email within one week of the assessment due date to request accommodation.
  Note: If you cannot submit a VOI due to limits on terms of use, you can submit a different form (Like a letter from a doctor, as long as it is an original document, and it contains the same information as the VOI.
- Other reasons for missing course assessments will require prior approval by the course coordinator. If approval is not granted in advance for non-medical reasons, then 0% will be recorded for the missed assessment.
- Note: If you submit an assessment, it will be assumed that you deemed yourself fit enough to do so and your grade will stand as calculated. No accommodations will be made based on claims of medical, physical or emotional distress ***after*** the fact.
- ***Missed Tests:*** A ,issed midterm test will be accommodated at the course coordinator's discretion. *Only 1 make-up exam will be scheduled for each of the missed tests, normally within 1-2 weeks after the missed test.*
- ***Participation (IMM433 Students):*** There are no make-ups for missed participation presentations, given the nature of the assessment (group project, live presentation). Failure to contribute to your group's presentation will result in an individual grade of zero.

Statement on Academic Integrity

All students, faculty and staff are expected to follow the University's guidelines and policies on academic integrity. For students, this means following the standards of academic honesty when writing assignments, collaborating with fellow students, and writing tests and exams. Ensure that the work you submit for grading represents your own honest efforts. Plagiarism—representing someone else's work as your own or submitting work that you have previously submitted for marks in another class or program—is a serious offence that can result in sanctions. Speak to your course instructor for advice on anything that you find unclear. To learn more about how to cite and use source material appropriately and for other writing support, see the U of T writing support website at http://www.writing.utoronto.ca. Consult the *Code of Behaviour on Academic Matters* for a complete outline of the University's policy and expectations. It is the rulebook for academic behaviour at the U of T, and you are expected to know the rules. For more information, please see http://www.artsci.utoronto.ca/osai and http://academicintegrity.utoronto.ca, and consult this Academic Integrity checklist.

Accessibility Needs

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability or health consideration that may require accommodations, please feel free to approach me and/or the Accessibility Services Office as soon as possible. The Accessibility Services staff are available by

appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The sooner you let them and me know your needs, the quicker we can assist you in achieving your learning goals in this course. Accessibility Services website: www.accessibility.utoronto.ca.

Course Schedule

Thursdays 3-5pm (location: Sid Smith 1070)

The tentative schedule for course topics is shown below.

Date	Lecture Topic	T.A.	Lecturer
January 9	Introduction to Neuroimmunology	1	Chao Wang
January 16	Innervation of Lymphoid organs	1	Martin Profant
January 23	Neuroimmunology of Allergy and Cancer	1	Sébastien Talbot (Queens University)
January 30	Meningeal Immunity and Gut Brain Axis	1	Olga Rojas
February 6	Microglial cell development	1	Julien Muffat
February 13	**Midterm Test**	1-2	-
February 20	***reading week***	-	-
February 27	Emerging concept in the role of immune system in neurodevelopmental disorders	2	John Lukens (lecture over zoom) (University of Virginia)
March 6	Innate immunity in neurodegenerative disorders	2	John Lukens (lecture over zoom) (University of Virginia)
March 13	Neuroimmune regulation of Stress	2	Chao Wang
March 20	CNS macrophage regulation of white matter health	2	Vironique Miron
March 27	Student presentations	1-2	Chao Wang
April 3	*Student presentations*	1-2	Chao Wang
April *	**Final Assessment**	1-2	TBD