

## Course & Instructor Information

### Course Coordinator & Instructor

Dr. JC Zúñiga-Pflücker [jc.zuniga.pflucker@utoronto.ca](mailto:jc.zuniga.pflucker@utoronto.ca)

### Course Instructors

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### Teaching Assistants

1 – Alara Tuncer [alara.tuncer@mail.utoronto.ca](mailto:alara.tuncer@mail.utoronto.ca)

2 – Boyan (Bobby) Tsankov [boyan.tsankov@mail.utoronto.ca](mailto:boyan.tsankov@mail.utoronto.ca)

3 – Salma Sheikh-Mohamed [salma.sheikh.mohamed@mail.utoronto.ca](mailto:salma.sheikh.mohamed@mail.utoronto.ca)

### Lectures

Lectures will take place in-person on **Tuesdays, 3:10 - 5:00 pm**

### General Reference Textbook

Although there is no required textbook for this course, *Janeway's Immunobiology* 9<sup>th</sup> ed. by Murphy & Weaver (Primarily Chapter 8) serves as an excellent general reference. In some cases, instructors will be providing you with reference lists of key papers or reviews that they will discuss as part of their lectures. In fourth-year courses, we expect you to start reading some of the primary literature. Immunology is an experimental science, and you will find that in this course it is not just facts and concepts that are being relayed, but also that the experimental foundations for these facts and concepts are stressed. Thus, you may have to consult the primary literature to clarify in your mind an experimental approach that was discussed in class but which you did not fully grasp because you were unfamiliar with the method(s) used.

### Review Sessions

**Optional** group review sessions will be scheduled around major assessments (midterm test, final assessment). Details to be provided on Quercus.

## Arts & Science Calendar Course Overview (24L)

This course covers the topics of hematopoiesis, myelopoiesis, lymphopoiesis, a study of the development of cells involved in the immune system including their ontogeny, physical, molecular, and biochemical characteristics, regulation of differentiation and selection of lymphocytes.

**Pre-Requisite:** IMM 350H1 / IMM 351H1

## Course Learning Objectives

At the end of this course, you should:

- Understand key experimental approaches and evidence for mechanisms underlying the development and differentiation of both innate and adaptive immune cells
- Generate hypotheses and design research studies to address fundamental questions in the field of Developmental Immunology
- Cultivate collaborative skills through group work with peers and/or teaching assistants through preparation of debate presentations
- Engage in oral or written scientific communication through debate presentations/term paper assignments

## Evaluation Scheme & Course Assessments

Assessment	% of Grade		Due Date
	IMM429	IMM1429	
Midterm Test	40%	40%	October 15
Final Assessment	40%	40%	TBD; December 6-23
Term Paper (IMM1429H1)	0%	20%	December 3
Participation (Debate; IMM429H1)	20%	0%	December 3, <i>in class</i>

**\*\* Course Drop Date: Nov. 4 for IMM429 / IMM1429**

### 1. Midterm Test (40%)

The midterm test will take place on **October 15, 2024**, during class time (3:10-5:00pm). It will cover lectures 1-5 and will include 12-15 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 Assessment (40%)

The date and location of the Final Assessment will be scheduled by the Faculty of Arts & Science. It will be scheduled for 2 hours and will cover lectures 6-10 The format will be 12-15 short answer questions.

*Refer to the “Missed Assessment Policy” section below for information on how to request accommodation for a missed final assessment and what accommodations may be possible.*

### 3. Term Paper (IMM1429H1 students only – 20%)

**Quercus submission deadline: December 3, 2024 (5:00 pm)**

Students enrolled in IMM1429H will be required to write a term paper (2 pages) which will consist of a critical review of a recent publication (to be assigned) in Developmental Immunology. Term papers must be uploaded as a PDF uploaded to the Quercus assignment link.

#### 4. Participation (IMM429H1 students only; 20%)

The last class session will be devoted to student group debate presentations of specific topics in developmental immunology, 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 (7-10 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).

**NB:** 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 debate 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.
- 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:** Missed tests (midterm test and final assessment) 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.*
- **Term Paper (IMM1429H1 Students):** Requests for accommodation surrounding the term paper are highly discouraged and will only be accommodated at the course coordinator's discretion. Following the deadline, a penalty of 10% per day will be applied to late submissions.
- **Participation (IMM429H1 Students):** There are no make-ups for missed participation (debate 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](http://www.accessibility.utoronto.ca).

## Course Schedule

The schedule for course topics is shown below.

Date	Lecture Topic	T.A.	Lecturer
September 10	Introduction & Hematopoietic stem cells	1	Zúñiga-Pflücker & Iscove
September 17	Hematopoietic stem cells	1	Zúñiga-Pflücker
September 24	Organogenesis & embryonic progenitors	1	Zúñiga-Pflücker
October 1	T lymphopoiesis	1	Zúñiga-Pflücker
October 8	T lymphopoiesis	2	Zúñiga-Pflücker
October 15	<b>Midterm Test</b>	2	-
October 22	Myelopoiesis	2	Epelman
October 29	<b><i>Fall break – reading week</i></b>	-	-
November 5	B lymphopoiesis	3	Paige
November 12	Unconventional T lymphopoiesis	2	Anderson
November 19	B lymphopoiesis	3	Gommerman
November 26	Comparative hematopoiesis	3	Zúñiga-Pflücker
December 3	<i>Student debate presentations</i>	1-3	Zúñiga-Pflücker
December *	<b>Final Assessment</b>	3	-