

**IMM350H1 – The Immune System in Action** The Immune System in Action illustrates how different elements of the immune system come together to mount efficient and measured responses. Topics include response to infectious microorganisms, allergy and autoimmunity, immune responses against cancer, and transplantation immunology.

**Course Coordinator:** Liliana Clemenza, Assistant Professor, Teaching Stream

Online Office Hours: Every Monday 1:30-2:30pm, Teams Office Hours Room. Other times can be arranged by appointment.

<b>Lecturers</b>	<b>Email</b>
T. Mallevaey	thierry.mallevaey@utoronto.ca
L. Clemenza	liliana.clemenza@utoronto.ca
A. Mortha	arthur.mortha@utoronto.ca
S. MacParland	s.macparland@utoronto.ca
L. Serghides	lena.serghides@utoronto.ca
T. Watts	tania.watts@utoronto.ca

**Delivery Mode:**

In-person lectures will take place on Thursdays from 10 a.m. to 12 p.m. They will be recorded and posted on Quercus. Attendance is not mandatory, but a 2% bonus will be awarded for attending eight out of the ten lectures, giving a possible 102 Quercus points for the course. Please note that the highest score entered as an official grade for the course is 100. Therefore, a student with a perfect score of 100 before the bonus will see their grade of 100 unchanged.

**Tutorials:**

On Mondays from 3-4pm, there will be in-person tutorials for planning and discussing group video presentations. Each Monday, seven to fourteen groups of seven to eight self-assigned students will discuss a draft of their project and receive feedback from the instructor/TAs. *Each group will attend only one tutorial, but tutorial attendance is mandatory for all group members. If a group member does not attend their scheduled tutorial, they will be removed from the group and must submit an individual video assignment on the same topic assigned to their original group.* Please see the Course Assessment section below for more important information about tutorials.

**Term Tests:** Term tests will be delivered **online** during regular class time.

**Arts & Science Calendar Course Overview (20L/7T)**

IMM350H ‘The Immune System in Action’ introduces the basic principles and key players of the immune system: differences and interplay between innate and adaptive immunity, how immune cells develop and function, how immune cells recognize threats and danger and mount an appropriate and measured response.

**Prerequisite:** IMM340H1

**Required Textbook:** Janeway’s Immunobiology, 10<sup>th</sup> Edition by Murphy, Weaver, Berg; Norton.

## Evaluation Scheme & Course Assessments

Assessment	% of Grade	Due Date
Readings & InQuizitive	10%	Ongoing
Group Video Presentations	10%	Two weeks after tutorial meeting
Test 1	20%	January 30, 10:00 am-11:30am ET
Test 2	20%	March 6, 10:00 am-11:30am ET
Final Exam (in person)	40%	TBA

### 1. Readings and InQuizitive (10%)

Janeway's textbook and companion site, InQuizitive, are mandatory resources for this course and can be purchased for CAD 72.00. Note: If you have already purchased the InQuizitive package as an IMM340 student in the fall 2024, you still have access to Janeway's resources and ebook and you will not need to buy it again. However, you will need a student Set ID and an access code that will be posted on Quercus

Readings related to the weekly lecture will be assigned every Thursday at noon, along with an associated InQuizitive quiz. In InQuizitive, students must answer a minimum number of questions in each activity before receiving a grade and reach a 100% Target Score. The quiz must be completed by 11:59 p.m. on Thursday of the following week (one-week window).

An activity called "How to use InQuizitive" will be available during the first week of class.

There are no make-ups for missed InQuizitive homework, given the nature of the assessment and since there is a one-week period for completion.

### 2. Tutorial Group Presentations: (10%)

#### Tutorial Attendance & Collaboration Sessions:

Tutorials are designed to facilitate group discussions, planning, and project development. This year, we are integrating generative AI to enhance your initial brainstorming and structuring process. Here is how the sessions will unfold:

**Designated Space:** Each Monday, student groups will attend the tutorial as scheduled (see List of Topics & Groups under the Tutorial Presentations Quercus Module). Given the spacious nature of the tutorial room, each group will comfortably find a spot to discuss their respective projects without disturbances. *Each group will attend only their scheduled tutorial.*

**Objective:** These sessions are dedicated to helping group members convene, brainstorm, and develop their presentations. The focus will be on using generative AI to create an initial outline for your presentation, which will serve as a starting point for further discussion, refinement, and development.

However, the final submitted work, including newly created images and script, must be original (i.e. not AI-generated) and reflect the group's collective input.

- **AI Tool Integration:**

- Step 1: At the beginning of the session, each group will upload their assigned scientific paper or case study to a designated AI tool (instructions and access details will be provided in advance).
- Step 2: The AI tool will generate a suggested outline for a 10-minute presentation. This outline will include key points and potential sub-sections that you can include or modify.
- Step 3: Groups will then critically evaluate the AI-generated outline. Discuss what works, what needs to be adjusted, and how to best align the outline with your project goals.
- Step 4: Modify the outline based on your discussion, ensuring the final structure reflects the group's understanding and approach to the topic.

- **Suggested Initial Prompt:**

You could provide a basic prompt like the following:

"Generate an outline for a 10-minute video presentation based on the key findings and main arguments of [Title of the Assigned Paper]. The outline should include an introduction, 3-5 main sections covering significant points or experiments, and a conclusion that ties the findings back to the broader field of immunology."

Groups can then adjust this prompt by adding specifics from their assigned paper or case study, such as emphasizing specific experiments, focusing on implications for EDIIA themes, or addressing controversial points within the research.

- **Instructor/TA's Role:** During these sessions, the instructor/TA will move around the room, visiting each group. This time is a chance for groups to ask questions, seek feedback on the AI-generated outline, and ensure they are on the right track. By the end of the tutorial, each group should present a draft plan detailing their presentation's direction, content, and design. This plan, including the AI-generated outline and your modifications, will be uploaded on the Quercus Group Page as a work in progress.
- **Opting Out of AI Use:** Groups that prefer not to use the AI tool can opt-out. In this case, the group should start by manually brainstorming and creating an outline. These groups must document their process and how they arrived at their final outline without AI assistance.

## Using AI for Contrasting Perspectives Throughout the Project

Video Production Phase:

- **Creative Decisions:** If your group has differing opinions on creative elements, such as whether to include or not information, how many speakers to feature, or the overall style of the presentation, use the AI tool to explore different options. For example:
  - "Generate alternative styles for presenting the key findings of [Title of the Paper]—one formal, one informal."

Final Decision-Making:

- After reviewing the AI-generated options, the group should discuss and decide on the final approach. Document these decisions, explaining how AI was used and what final choices were made.

If AI tools are used, the group must:

Document AI Use:

1. **Outline:** Briefly explain how the AI tool was used, what aspects were retained or modified, and how the final outline was developed.
2. Use of AI throughout the project to solve within-group disagreements must also be documented.

When you submit your video, these two documents should be uploaded as attachments to the comment space. The group's effectiveness in using and modifying the AI output will also be assessed (See rubric).

Groups opting out of AI use must also document their brainstorming process and outline development, ensuring that the same level of rigor is applied. The points allocated to AI use will be distributed according to the other rubric criteria.

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### Microsoft Copilot:

The recommended AI tool is the protected version of Microsoft Copilot available to faculty, staff, and UofT students. "Copilot is an enterprise version of an AI-powered chatbot and search engine that better protects users' privacy and security (when users are signed into their U of T account). Copilot, like other generative AI tools, may provide information that is not correct ("hallucinations"), and it is up to each individual user to determine if the results are acceptable. For information and instructions on accessing the enterprise edition, please read and adhere to the [Microsoft Copilot guidelines for use](#). "

*Please note that any uses of generative AI beyond those listed above are not permitted and will be considered unauthorized aid, which is an academic offence. Submissions will be assessed at the discretion of the course coordinator, and students will be asked to show evidence of their work if a case of Academic Integrity and the inappropriate use of Generative AI tools is suspected.*

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### Group Formation:

- Assigning: Once the instructor populates Quercus with groups and topics, you can select a group number and its associated topic.
- Size: Groups must consist of up to 7 students (might be increased to 8, depending on final enrolment).
- Diversity: Forming groups with a mix of skills is beneficial for a richer collaborative experience.
- Roles: Assign specific roles. Remember, each member can assume multiple roles, and roles can overlap among members:
  - Researcher: Everyone participates in this role
  - Writer: Drafts the presentation's primary content or a complete script, if preferred.
  - Presenter: Delivers the presentation. If possible/desired, all members should be involved as presenters.
  - Editor: Refines clarity, coherence, and grammar.
  - Coordinator: Manages meetings and acts as the group's representative.
  - Visual Designer: Designs slides or visual aids.

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### Guidance for Group Choice:

This assignment offers students flexibility regarding their learning styles, interests, and scheduling availability. When selecting a group, consider:

1. Interest in the topic.
2. Personal schedule.
3. Interest in clinical (case studies) vs. basic research (longer readings).
4. Interest in acquiring digital skills.
5. Commitment to EDIIA themes.

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### Types of Presentations:

1. Case Study Presentations:
  - Source: Based on short case studies from Geha, Notarangelo's "Case Studies in Immunology, 7th edition, 2016". These case studies can be accessed as part of the Janeway's package. Additional research on the selected case study is not strictly required but is welcomed.
2. Longer Reading Presentations:
  - Source: In-depth readings, including immunology review articles or landmark primary papers, DEAAI themes. These PDF files will be posted on Quercus.

### Format: Submit a 10-minute video or voice-over PowerPoint presentation.

Submission: It is due by 11:59 p.m. on Sunday, two weeks after the group's tutorial week. (For example, groups meeting on Monday, November 20, have a submission deadline on Sunday, February 2).

*Please take note of the following: A Quercus Graded Discussion will be set up. In this discussion, you can share a link to your presentation and present your work to your peers. One of the video presentations posted in this Quercus Discussion will be chosen to be featured on the department website.*

The list of case studies and long readings will be posted on Quercus under the Tutorial Presentations Module.

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### Presentation Crafting Tips:

- Slide Design: Prioritize visuals over text. Use graphs, images, or charts.
- Script: Either script your narration or create bullet points to maintain focus.

### Software Recommendations:

- PowerPoint: Use the "Record Slide Show" feature for voice narrations.
- Online Tools: Platforms like Quercus, Zoom, and MyMedia offer screen and voice recording.
- Advanced Editing: Adobe Premiere Pro, iMovie, or Filmora

As indicated in the "Missed Assessment Policy" section below, there are no extensions nor accommodations for the Group Assignment due to the nature of the assessment (i.e. it is a group assignment).

<b>Criteria</b>	<b>Inadequate (5%)</b>	<b>Average (15%)</b>	<b>Good (20%)</b>	<b>Outstanding (25%)</b>
Presentation Structure/Audience	The structure is incoherent. It does not catch the attention of the viewer. The opening statement and ending are do not capture the main points of the video. Very little effort made overall Content and presentation not appropriate for intended audience	Good effort but the structure is not completely coherent. It does not catch the attention of the viewer at all times. The opening statement and ending do not effectively capture the main points of the video. Content and presentation often not appropriate for intended audience.	Good structure but the viewer loses focus at times. Good opening statement summarizing main points and good ending. Content and presentation almost always appropriate for intended audience.	Very good structure, maintains focus throughout. Excellent opening statement summarizing main points, impressive ending. High quality overall. Content and presentation always appropriate for intended audience
Content/Research	Content does not reflect the chosen topic and has several inaccuracies.	Content represents the chosen topic but has some inaccuracies.	Content illustrates well the chosen topic and is mostly accurate.	Content illustrates well the chosen topic and is accurate throughout. A critical understanding of the topic is demonstrated
Script/Narrative	Narrative is not clear, a script was not generated, references were not cited consistently.	Script was generated but narrative is not coherent, references were not always cited consistently.	Script is clear and organized. References are cited in a consistent manner.	Excellent script and fascinating narrative. References are cited in a consistent manner.
Use of digital media/Creativity and editing	Lacks originality, poor quality and selection of images Video does not flow and is not captivating, Presentation is hard to follow, music (if used) is distracting, Lights not well used; audio is poor.	Lacks originality but the quality and use of non-original images is acceptable Video has a decent flow and presentation is not hard to follow but is not exciting, music (if used) is distracting. Acceptable use of lights, audio is good.	Good ideas throughout, some original images created for the video. Good quality altogether. Video has a good flow and presentation is captivating, music (if used) complements well the images. Good use of lights, audio is good	Contains innovative ideas, several original images created for the video Excellent quality altogether. Video presentation flows nicely. Presentation is articulate and enthusiastic. Use of music enhances the video quality. Perfect audio.

<b>Criteria</b>	<b>Weight (Points)</b>	<b>Description</b>
<b>Presentation Structure/Audience</b>	20	Evaluates the coherence, engagement, and appropriateness of the presentation for the intended audience.

Criteria	Weight (Points)	Description
Content/Research	25	Assesses the accuracy, relevance, and depth of the content presented.
Script/Narrative	20	Looks at the clarity, organization, and citation of references in the script.
Use of Digital Media/Creativity and Editing	20	Measures the originality, quality, and integration of digital media, as well as the overall flow and engagement of the video.
AI and documentation of AI Use	15	Evaluates how effectively AI tools were used, including the critical evaluation and modification of AI-generated content.

### 3. Tests and Final Assessment

Term Tests 1 and 2 will take place online via Quercus Quizzes. The Final Exam will be in person. Test dates and coverage/format are highlighted below:

Test 1 (20%): Test 1 will be online on January 30, 2025, from 10 am to 11:30 am. It will cover Lectures 1-3 of the course, with 10 questions per lecture in a multiple-choice format.

Test 2 (20%): Term Test 2 will be online on March 6, 2024, from 10am to 11:30 a.m. It will cover Lectures 4-6 of the course, with 10 questions per lecture in a multiple-choice format.

Final Exam (40%): The Faculty of Arts & Science will schedule the date of the final assessment. The final exam will cover lectures 7-10 of the course, with 10 questions per lecture in a multiple-choice format.

Please refer to the “Missed Assessment Policy” section below for information on requesting accommodation for a missed test or final assessment and what accommodations may be possible.

#### **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.
- **InQuizitive Homework** – There are no make-ups for missed InQuizitive homework, given the nature of the assessment and since there is a one-week period to complete it.
- **Missed Tests/Final Assessment** – Missed tests/final assessments will be accommodated at the course coordinator’s discretion. *Make-up tests/final assessments will be composed of a mix of short-answer and multiple-choice questions.*
- **Group Assignment** – There are no accommodations for individuals/groups for the Group Assignment under any circumstances due to the nature of this assessment. Late videos will not be accepted and there are no accommodations available for individuals’ missed contributions to their group’s video.

## Course Schedule

Lecture Date	Lecture	Lecturer
Jan 9	Innate Lymphocytes	T. Mallevaey
Jan 16	Mucosal Immunity	A. Mortha
Jan 23	The microbiota and the Immune System	L. Clemenza
Jan 30	<b>Test 1</b>	N/A
Feb 6	Cancer Immunology	T. Mallevaey
Feb 13	Cancer Immunotherapy	T. Mallevaey
Feb 20	<b>Reading week</b>	N/A
Feb 27	Transplantation Immunology	S. MacParland
March 6	<b>Test 2</b>	N/A
March 13	Immune memory & vaccination	T. Watts
March 20 March 27	Immune responses to viral & bacterial infections Autoimmunity	L. Serghides L. Clemenza?
April 3	Hypersensitivity reactions	L. Clemenza
Tutorial Date	Groups	Submission Date (by 11:59pm)
Jan 20	Groups Lectures 1 & 2	Feb 2
Jan 27	Groups Lectures 3	Feb 9
Feb 3	No Tutorial	
Feb 10	Groups L. 4	March 2
Feb 17	No Tutorial Reading week	
Feb 24	Groups Lecture 5	March 9
March 3	Groups Lecture 6	March 16
March 10	No Tutorial	
March 17	Groups L. 7	March 30
March 24	Groups L. 8	April 6

### **Accessibility Needs:**

The University of Toronto is committed to accessibility. If you require accommodations for a disability or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible: [disability.services@utoronto.ca](mailto:disability.services@utoronto.ca) or <http://studentlife.utoronto.ca/accessibility>.

### **Masks on Campus:**

While the mask mandate has been paused as of 1 July 2022, the use of medical masks continues to be strongly encouraged in high-density indoor settings where physical distancing is not possible. Please wear a mask when attending lectures or tutorials unless not able to do so due to health condition.