Honours Research and Thesis, Syllabus
Department of Microbiology & Immunology
MICI 4901/02 Fall 2024

Dalhousie University acknowledges that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People and pays respect to the Indigenous knowledges held by the Mi'kmaq People, and to the wisdom of their Elders past and present. The Mi'kmaq People signed Peace and Friendship Treaties with the Crown, and section 35 of the Constitution Act, 1982 recognizes and affirms Aboriginal and Treaty rights. We are all Treaty people.

Dalhousie University also acknowledges the histories, contributions, and legacies of African Nova Scotians, who have been here for over 400 years.

Course Instructor

Name	Email	Office Hours
Andrew Stadnyk, Ph.D. (Honours Coordinator)	astadnyk@dal.ca	arranged by email request

Course Description

Our Honours offering is intended to be flexible, enabling students to take advantage of new opportunities, for example, in big data and science communication domains. Honours requires <u>original research</u> conducted under the supervision of a faculty member as described below in one of 2 formats, with the second available when extenuating circumstances prevent a student from being in the lab (or onsite) for at least one term.

1) The common arrangement is the student identifies and confirms a single faculty supervisor for both terms (the supervisor may choose to include a collaborator, or the Honours Coordinator may add a co-supervisor). The project is <u>original research</u> conducted with support from the supervisor or at the supervisor's discretion, a member of the supervisor's staff or a collaborator. The project may be "wet lab" experimentation, "in silico" research (for example, metabolomics or microbial or gene identification from publicly available data sets or data provided by the supervisor) or original research in MICI Public Policy or Science Communication. In all circumstances, the research includes searching, compiling, and critiquing relevant published background material for a research question (becomes the thesis Introduction), designing and conducting experiments and/or analyses, interpreting outcomes and preparing final images/tables (becomes Results), and explaining the significance and relevance of the findings and any shortcomings and confounding variables (becomes Discussion). A written thesis is required and a presentation of the thesis research is commonly required.

2) If due to extenuating circumstances the student can only be in the laboratory for one term, the project could be a "hybrid" of a literature review, which includes a comprehensive critique

of methodologies/techniques relevant to the research question (included in the thesis Introduction) and original experiments conducted in the lab. A written thesis is required. A presentation of the thesis is commonly required.

In all cases a written thesis is to be submitted and the presentation made before the end of 4902. Specific deadlines are negotiated with the students and posted in Brightspace.

While 4901 and 4902 are taken sequentially, the terms can be separated, for example to accommodate a Co-op placement, providing the supervisor approves the arrangement.

Course Prerequisites

Students must meet all course and grade standing requirements for Honours as detailed in the Dalhousie University Course Calendar and the MICI Undergraduate Handbook. The requirements can be confirmed with any undergraduate advisor but final admission into the course can only come from the Honours Coordinator (who also provides a registration override).

Course Exclusions

MICI 4703/04.

Student Resources

An "Honours Handbook" is provided to guide students through the program expectations and requirements, and milestone deadlines will be posted in Brightspace and announced at monthly meetings. The Handbook contains details regarding formatting theses. Otherwise, Honours is a mentor-based experience and students are invited to ask their supervisors for resources and training experiences specific to their research. Students are welcome to contact the Honours Coordinator with other questions regarding resources.

Course Structure

Lectures

A class reviewing statistical analyses will be held mid-term during 4902.

Tutorials

Students are invited to suggest topics they may wish to cover as a group during their research period.

Course Materials

The Honours Handbook contains course information. Any newly arising materials will be advertised and available in Brightspace.

Assessment

3 slide presentation (non-graded)

All students will be asked to prepare and present a 3 slide (maximum) introductory presentation early during 4901. Students will be provided with content and format feedback.

Mid-program formative assessment (non-graded, questionnaire in Handbook)

Near the end of 4901 students will meet with their supervisors and jointly complete an interview intended to review expectations and arrive at a common understanding over whether either the student or supervisor are/are not meeting the expectations.

Thesis first draft (grading rubric in Handbook)

Early during 4902 students will submit as complete a draft of their thesis as they can prepare. The Honours Coordinator will grade the theses and provide feedback. Supervisors will review and edit the draft but not grade it. This is the only draft the supervisor will review prior to the student submitting the final version.

Final oral presentation (grading rubric in Handbook)

Each student will prepare and give a presentation to a Departmental audience late in 4902. All faculty in attendance will be invited to grade the presentation.

Final thesis (grading rubric in Handbook)

Each supervisor and 2 "readers" chosen by the Honours Coordinator will grade the final theses.

Supervisor's appraisal of student's achievement/performance (grading rubric in Handbook)

Supervisors will appraise the activities and achievements of their students, excluding the written thesis.

Summary of graded assessments values

Criteria	Coordinator*	Supervisor	Other faculty
Thesis first draft, due early during MICI 4902	15%		
Supervisor's appraisal of student's achievement		20%	
final Thesis		20%	2 readers 15% each**
10 min oral presentation***			15% total****

*MICI Honours Program Coordinator

**the grades of multiple readers (recruited by the Coordinator) are additive (not averaged)

***may be online; if an oral presentation is not held, a third "faculty" grader will be sought

****the average of all the faculty who submit scores

Conversion of numerical grades to final letter grades follows the
Dalhousie Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D (50-54)
A (85-89)	B (73-76)	C (60-64)	F (0-49)
A- (80-84)	B- (70-72)	C- (55-59)	

Course Policies on Missed or Late Academic Requirements

Students are encouraged to contact the Honours Coordinator if they have a reason to miss deadlines for any graded assessments. SDAs cannot be used to miss graded assessments. Any missed assessment will be scheduled for a future date. Should a student not complete all the graded assessments before the end of 4902, a "placeholder" grade will be applied until assessments are completed.

Course Policies related to Academic Integrity

Academic integrity is paramount to the generation of original knowledge and compositions. Therefore, plagiarism and use of generative AI and language models like ChatGPT are prohibited.

Learning Objectives

- Source, read, critique and compile relevant background and precedents published in the peer-reviewed literature into the rationale for choosing a research question/hypothesis.
- Design and conduct experiments, original analyses or critique the scientific literature including precedents, techniques and/or methodological approaches and possible ethical concerns.
- Perform analyses of experimental outcomes or other publications and compile data into sharable figures or tables.
- Discuss the relevance of new findings and provide directions for research/emphasis that the topic may take in the future.
- Learn approaches and methodologies in research under experienced supervision.
- Compose an original document structured as a thesis, reporting research.
- Prepare and deliver a seminar based on your own research topic, progress and interpretations.

University Policies and Statements

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit or e-mail the Indigenous Student Centre at 1321 Edward St or elders@dal.ca. Additional information regarding the Indigenous Student Centre can be found at: https://www.dal.ca/campus_life/communities/indigenous.html

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." Additional internationalization information can be found at: https://www.dal.ca/about-dal/internationalization.html

Academic Integrity

At Dalhousie University, we are guided in all our work by the values of academic integrity: honesty, trust, fairness, responsibility, and respect. As a student, you are required to demonstrate these values in all the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. Additional academic integrity information can be found at: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion, please contact the Student Accessibility Centre (https://www.dal.ca/campus_life/academic-support/accessibility.html) for all courses offered by Dalhousie with the exception of Truro. For courses offered by the Faculty of Agriculture, please contact the Student Success Centre in Truro (https://www.dal.ca/about-dal/agricultural-campus/student-success-centre.html)

Conduct in the Classroom – Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view.

Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). Additional diversity and inclusion information can be found at: http://www.dal.ca/cultureofrespect.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner - perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution. The full Code of Student Conduct can be found at:

https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. Additional information regarding the Fair Dealing Policy can be found at: https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html

Originality Checking Software

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work

and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. Additional information regarding Originality Checking Software can be found at:

https://www.dal.ca/dept/university_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality-checking-software-policy-.html

Student Use of Course Materials

Course materials are designed for use as part of this course at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading to a commercial third-party website) may lead to a violation of Copyright law.