Experiential Learning in Microbiology
and Immunology Syllabus

Department of Microbiology and Immunology
MICI3620 Winter 2025

*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(s)**

|  |  |  |
| --- | --- | --- |
| Name | Email | Office Hours |
| Denys Khaperskyy (course coordinator) | d.khaperskyy@dal.ca | Tupper 1A,Same as class time |

**Course Description**

This lab-based course is designed to give students an introduction to general lab procedures, molecular and cell biological techniques in bacterial pathogenesis, cancer cell biology, immunology, molecular genetics, or virology. In collaboration with the research supervisor, students will draft a learning agreement specifying learning outcomes and how these will be achieved. Students are expected to work an average of 5-10 hours per week in the laboratory of their research supervisor (minimum 65 hours per term). Lab research may be conducted in any laboratory that focuses on microbiology and immunology or a related discipline (e.g. cell biology, pharmacology), however the research supervisor or co-supervisor must be a member of the Department of Microbiology and Immunology.

NOTE: To register for this course, students will need to find a research supervisor and receive approval from the coordinator.

*Course Prerequisites*

Includes all of MICI 2100.03, BIOC 2300.03, BIOC 2610.03, BIOL 2020.03, BIOL 2030.03 (a minimum of B- in each of these courses). Course coordinator’s permission is required.

*Course Exclusions*

This course is restricted to students registered in a Majors or Honours degree in Microbiology and Immunology; any other students interested should consult the course coordinator. The following may not be used towards [MICI 3620](http://www.registrar.dal.ca/calendar/class.php?subj=MICI&num=3620): lab work that is part of another scheduled class, co-op work-terms, or paid employment. Only one experiential learning course per degree is permitted. [MICI 3620](http://www.registrar.dal.ca/calendar/class.php?subj=MICI&num=3620) may not be taken concurrently with [MICI 4900](http://www.registrar.dal.ca/calendar/class.php?subj=MICI&num=4900), [MICI 4700](http://www.registrar.dal.ca/calendar/class.php?subj=MICI&num=4700), [MICI 4901](http://www.registrar.dal.ca/calendar/class.php?subj=MICI&num=4901), [MICI 4902](http://www.registrar.dal.ca/calendar/class.php?subj=MICI&num=4902), or a co-op work term.

**Course Structure**

*Course Delivery*

In-person, lectures are not recorded.

Introductory lecture and 2 lectures describing course assignments will be delivered by the course coordinator and PDF document with lecture slides uploaded to the course Brightspace page. Attendance at these lectures is mandatory. When lectures are not scheduled, coordinator will be available during the scheduled class time (Tuesdays 4:35-5:25 pm) in Tupper 1A for questions and discussions (e.g. these will be office hours for MICI3620). Any alterations to this schedule will be communicated in advance via email list and on Brightspace.

*Lectures*

**Tuesdays 4:35-5:25 pm in Dentistry 1205**

*Laboratories*

5-10 hours per week (as outlined in the signed learning agreement with research supervisor).

**Course Materials**

There is no textbook. The PDF document with lecture slides will be uploaded to the course Brightspace page for reference.

**Assessment**

*Assignments*

Introduction to Laboratory Biosafety Required Due ***28 January 2025***

Assignment (2-panel figure with legend) Required Due ***4 March 2025***

Laboratory work 50% Minimum 60 h/term
(assessed by supervisor)

Final report including figures with legends 50% Due ***8 April 2025***

*There are no tests, quizzes, and there is no final exam.*

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| Conversion of numerical grades to final letter grades follows the [Dalhousie Grade Scale](https://www.dal.ca/campus_life/academic-support/grades-and-student-records/grade-scale-and-definitions.html) |
| 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**

The grade for assignments submitted late will be reduced by 10%for each day after the due date. Therefore, failure to submit an assignment in 10 days after the due date will trigger an F grade, unless other arrangements are made with the course Coordinator. The Student Declaration of Absence (SDA) is not required. Therefore, you must let the Coordinator know immediately (via email to d.khaperskyy@dal.ca) so alternate arrangements can be made, if appropriate.

**Course Policies related to Academic Integrity**

Each student is expected to work on their assignments individually and independently. However, the supervisor (or direct supervisor) is expected to provide input on early drafts of written assignments and approve of the submission of the final draft before sending it to the course Coordinator.

Use of any generative AI and large language models (e.g. ChatGPT) should be discussed with the research supervisor and if they permit, such use should be minimal and limited exclusively to conducting literature searches for methods and research background. All student assignments and reports should be written and proofread exclusively by the student. Input/suggestions from the research supervisor are permitted and encouraged instead of the use of ChatGPT and similar software. Generating text or figures (including proofreading/language “polishing”) using AI is not allowed.

**Learning Objectives**

1. Perform selected biosafety modules.

2. Maintain a neat and reproducible record of all laboratory work (lab journal).

3. Independently perform a minimum of two experimental and/or analysis techniques that are relevant to the lab you are working in and be able to communicate to others in written format how to reproduce these techniques.

4. Generate a scientific figure and figure legend and represent two pieces of original data this way.

There is no textbook for this course. All required materials will be distributed via email and posted on Brightspace.

**Course Content (Lecture schedule)**

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| --- | --- | --- | --- |
| Week | Date | Lesson Topic(s) | Reading/Assessment |
| 1 | 7 January 2025 | Introductory lecture | In-person lecture |
| 3 | 21 January 2025 | 2-panel figure assignment review | In-person lecture |
| 10 | 11 March 2025 | Final report guidelines | In-person lecture |

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/about/leadership-governance/academic-integrity/faculty-resources/ouriginal-plagiarism-detection.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.